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CONTENTS

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The SOUTHERN ECONOMIC JOURNAL

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FACTORS INFLUENCING STATE PER CAPITA INCOME DIFFERENTIALS

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"The paradox of the South is that while it is blessed by Nature with immense wealth, its people as a whole are the poorest in the country. . . . Ever since the War between the States the South has been the poorest section of the Nation. The richest State in the South ranks lower in per capita income than the poorest State outside the region."[1] Thus did the National Emergency Council summarize the economic conditions of the South in 1938, a report which led President Roosevelt to label the region as "the Nation's No. 1 economic problem—the Nation's problem, not merely the South's."[2] Since that time the South has been referred to both as the nation's economic problem number one and as the nation's opportunity number one. In recent years, however, more attention has been given to the opportunities for industry in the South and to the fact that during the war the region gained in per capita income[3] relative to the national average.[4]

The purposes of this paper are (1) to examine statistically some of the factors which influenced state per capita income differentials in 1940,[5] (2) to show the effect of price changes since 1929 on these differences, and finally (3) to discuss recent changes in the factors, their prospects for further change, and the bearing of both on state per capita income differentials.

I

In this paper the income analyzed is an average or aggregate by states. Since it is a per capita figure, population differences by states as a factor are automatically removed. Being an average, all cross sections of the population are of necessity represented—the skilled and the unskilled laborers, the young, the old, and the unemployed. Consequently we are dealing with an economic aggregate which

[1] *Report on Economic Conditions of the South,* prepared for the President by the National Emergency Council, June 1938, pp. 8 and 21.

[2] *Ibid.*,p.1.

[3] Derived from state income payments to individuals by dividing by the Census estimates of population. State income payments to individuals have been defined by Schwartz and Graham, U. S. Dept. of Commerce, as the income received by individuals from business establishments and governmental agencies, wages and salaries, proprietors' incomes, property income, and other income. For more detail see C. F. Schwartz and R. E. Graham, Jr., "State Income Payments in 1947," *Survey of Current Business*, U. S. Dept. of Commerce, Aug. 1948, pp. 18–19.

[4] *Ibid.*, pp. 10 and 15.

[5] 1940 was used in the analysis because it is the latest year for which complete data are available on all the factors included in the anlaysis.

characteristically obscures much detailed information about the universe it represents.

In the analysis we seek the reasons or the factors which are associated with variations in this aggregate from state to state. Differences in resources by states will not be examined because suitable measurements are unavailable.[6] Instead, the reasons for the differences will be sought in the stage of economic development[7] and the abilities of the people and in the extent of their participation in the economy of the respective states. The stage of economic development determines not only the level of general productivity of labor but also the productivity differential from high to low. The degree of skill of the labor force determines the extent to which such differentials are exploited and the point in the differential scale where the bulk of them will be concentrated, which will be reflected most sharply in the average wage, and in state per capita income. The participation of the population in the economy includes the employed but also reflects the unemployed and the aged and very young who are unemployable. In general the higher the percentage of a population which is unemployed and unemployable, the lower will be the per capita income, other things being equal, because that income which is earned by the employed is spread to a larger number of persons.

The factors which tend to measure these differences are the percentage of the employed labor force occupied in agriculture, the educational level of the population, and the percentage of the population classified as Negro. One other important factor, not often considered in analyses of this sort, is the percentage of the population employed. The first factor shows the stage of economic development[8] because the higher the percentage of population engaged in agriculture, the less advanced is the economy industrially and otherwise. Both the educational level of the population and the percentage of the population Negro reflects the ability of the state's employable labor force to take advantage of differential

[6] It might be pointed out further in this connection that resources acquire their value from the profits which they return, which depend upon the application of technology, skill, and capital to their development and use. In other words the resource measure we might find or devise would be both cause and effect, perhaps more the latter for the purposes of the analysis.

[7] No refined definition of "economic development" will be attempted because it is beyond the scope of this paper. It will mean in simple terms the degree of industrialization or some other measure of progress beyond a strictly agricultural economy.

[8] The percentage of the employed labor force (excluding government employees) occupied in agriculture, forestry, and fisheries is taken as the index of economic development because the relative importance of these lines in the occupational pattern of the labor force shows the extent to which the state is still dependent on an elementary form of economic organization. In other words, the greater relatively the employment in agriculture the more the state's economy may be said to be dependent on an early, simple form of economic organization. This measure of agriculture's importance indicates indirectly industry's importance, although imperfectly. The greater range of differentiation in industry would be more difficult to sum compositely. Then too such an index would reflect to a large extent at least two of the other factors which we wish to examine: per cent of the population employed and the educational level of the labor force.

employment opportunities.[9] Educational level indicates training and ability to acquire skills. The percentage of the population Negro represents lack of training but more importantly discrimination and restriction against a segment of the population participating in the range of economic opportunities of the state. Lack of participation of the population in the economy of the state is most importantly shown, however, by the percentage of the population employed. Taking the ratio on this basis shows both the unemployed and the unemployable because of age, either too young or too old. States with high birth rates, other things being equal, have a larger percentage of children too young to be employed, and the per capita income figure tends to be depressed correspondingly. There is a fifth factor which operates over a period of time even more importantly apparently than either of the above four factors outlined. It is the general price level, changes in which are associated with corresponding changes in the level of income and hence also of per capita income. The general price level may be considered to affect it in a dynamic sense and the "four factors" in a static. In the section which immediately follows the analysis will consider the factors affecting state per capita income differences at a moment of time, the general price level effects being left to a later section.

In the statistical analysis which follows with the four factors[10] a number of assumptions apply. First, since the attempt will be made to estimate the constants of the factors in the relationship to per capita income in 1940, the 48 states plus the District of Columbia observed for that year are considered as 49 observations, which constitute the entire universe. There are of course good grounds for assuming that they are 49 observations from a universe of many years. But this assumption would face the difficulty of determining the importance of the price level over time on the constants of the variable factors for the one-year, or static analysis. Because of the nature of the problem it is not believed that they will be affected greatly but there are no grounds at present for assuming that it would cause these values to conform to a sampling distribution.

[9] It is recognized of course that there is a tendency for the stage of economic development to determine the general level of ability or skill of the population, although not directly the educational level; however, there is an indirect effect even on this latter. As the economy becomes more highly developed, its greater profitableness affords more tax money for education. It is not possible to resolve these difficulties in this paper; however, it is believed that for a short-run static analysis, which we attempt in this first section, the measures here used are satisfactory for a first approximation to the nature of the relationships.

[10] The factors are defined as follows:

X_1 = state per capita income.

X_2 = per cent of employed labor force (excluding government employees) occupied in agriculture, forestry, and fisheries.

X_3 = percentage of the total population employed.

X_4 = percentage of the total population classified as Negro.

X_5 = median school year completed of all males 25 years of age and over in 1940. A word in explanation of this factor. Since, according to the Census of 1940, 79 per cent of all males 14 years old and over were in the labor force as compared to 25 per cent for females, it better represents the educational level of the productive labor force than if taken for the entire population.

The results therefore can only be validly applied to 1940. When it becomes possible to include the price level in the equation, which would require also observations on the four factors for a number of years, the constants derived would have value in making forecasts for other years. It is seen therefore that these difficulties limit the possible accomplishments of the analysis, but it has value as a sort of inventory of what we have and where we stand in the general nature of the relationship of factors affecting state per capita income differentials. Secondly, the effect of the different factors on per capita income (X_1) is assumed to be a linear relationship.[11] As a matter of fact a graphic analysis of each factor against X_1 in a scatter diagram strongly supports the assumption. Obviously there is no way to know the shape of the correlation surface when all four factors on per capita income are included in a correlation analysis. Curvilinear and joint functions may be required to adequately describe the relationship. However since there are no theoretical or other grounds for assuming them, the simpler, more straightforward linear functions have been chosen. It has been pointed out that if the conditions[12] approximately meet those required for linear functions, they are to be preferred since the computations are less arduous and the application of results not seriously in error.

II

Accordingly the correlation analysis was made, the results being given in Table I. The coefficient of multiple correlation with the four factors on state per capita incomes is 0.9428[13] and the coefficient of determination is 0.89, which means that approximately 89 per cent of the variation in per capita income be-

[11] The relationship implies a straight line. This means that the ratio of the change of any factor to X_1 is arithmetic, that is, a unit of change in it is associated with some constant arithmetic change in X_1.

[12] The departure from linearity is small, or the range of data to be dealt with is sufficiently accurately analyzed by a linear relationship. But it must be realized that the correlation coefficient may fall short of the true value because of failure to adequately describe the functional relationship. See H. T. Davis and W. F. C. Nelson, *Elements of Statistics*, pp. 254–255.

[13] Because of the nature of the data, a sort of time series and some question as to the components of the universe, the application of tests of significance is unclear and perhaps of questionable validity. On intuitive grounds, based on the theoretical connection of the factors to X_1, as hypothecated, it appears that the coefficient is highly significant. However, since R in this case reflects the extent to which the actual data depart from the correlation surface, it is possible to devise a test under the assumption that the deviations from the correlation surface are approximately random. That this assumption is correct is indicated in Figure 2 by the scatter of actual state per capita incomes about the regression line (which represents the estimated state per capita incomes from the regression equation). The ratio of the mean variance associated with the regression equation to the mean square of the deviations between the actual and the estimated state per capita incomes is 97.1. A table of F-values reveals that this ratio is significantly larger than unity, being at the 1 per cent point. Therefore it can be concluded that the regression obtained from the four factors on state per capita incomes is not an accident. See W. A. Hendricks, *The Theory of Sampling*, U. S. Department of Agriculture, and N. C. State College of Agriculture and Engineering, 1942, pp. 102–103.

tween states in 1940 was associated with the four factors. This leaves 11 per cent of the variation in X_1 unexplained by factors not included in the analysis, or by imperfect measurements or an incorrect determination of the functions of the factors which were included.

In Table I are given also the regression coefficients and their tests of significance based on the F-ratio.[14] It is seen that the variance explained by each factor compared to the variance of the error is significantly greater than unity, in fact at the 1 per cent point in F-tables. The conclusion is that the observed regression of each of the four factors on state per capita income in 1940 is sufficiently large not to have occurred by accident. Consequently it is apparent each of the factors plays a prominent part in explaining the differences in per capita

TABLE I

Summary of Correlation Results with Four Factors on State Per Capita Incomes, 1940

FACTOR	UNIT	NET REGRESSION COEFFICIENT	SIGNIFICANCE OF NET REGRESSION COEFFICIENT*	BETA COEFFICIENT
X_2. Per cent labor force in agriculture, forestry, and fisheries†	1 per cent point	−5.03147	Highly significant	−0.3879
X_3. Per cent total population employed	1 per cent point	27.00513	Highly significant	0.5012
X_4. Per cent total population Negro	1 per cent point	−2.28718	Highly significant	−0.1543
X_5. Median years of schooling of all males 25 years of age or over	1 year	55.60370	Highly significant	0.2152

$X_1 = -691.46 - 5.03147\,X_2 + 27.00513\,X_3 - 2.28718\,X_4 + 55.60370\,X_5$.

$R^2_{1.2345} = 0.89818$; $R_{1.2345} = 0.9477$; $\bar{R}^2_{1.2345} = 0.88892$; $\bar{R}_{1.2345} = 0.9428$; $\bar{S}_{1.2345} = \$64.87$.

* On the basis of the F-test. It means that the ratio of the mean square of the variation associated with each factor to the mean square of the error is significantly greater than unity according to F-tables. Highly significant means that the error mean square was so small relative to the variance associated with each factor that there is only one chance or less in 100 of a ratio that large having occurred by accident; hence of the particular regression coefficient being tested of having occurred by accident.

† Per cent of total labor force employed excluding government employees.

income between states and compositely they go a long way toward accounting for the state differentials in 1940.

Which of the factors is most important in explaining differences in state per capita income is difficult to determine but this sort of information is highly desirable. No final or reliable answer can be given to this question because of the inadequacy of statistical tools for their determination, but an attempt to rank them roughly will be made below with such methods as may be applied to their determination.

The net regression coefficients indicate the change in state per capita income associated with a unit change in each of the independents. Thus a decrease of 10

[14] See footnote 13. The reference cited there gives a good discussion of tests of significance based on the F-ratio for regression coefficients.

per cent points in the per cent of the labor force (excluding government) employed in agriculture, forestry, and fisheries was associated with $50 increase in state per capita income in 1940, an increase of 10 per cent points in the per cent of the population employed with $270 increase, a decrease of 10 per cent points in the percentage of the population Negro with $23 increase, and one year increase in the median years of schooling of males 25 years old or over in 1940 with an increase of $56 in state per capita income.

The "beta" coefficients[15] give a better measure[16] of the relative importance of the different factors, for it measures the proportion of the standard deviation of the dependent which a change of one standard deviation in the independents produces. Accordingly all "beta" coefficients are comparable, and their relative size indicates that per cent of the total population employed (X_3) was the most important in explaining differences in state per capita incomes in 1940; per cent of labor force employed in agriculture, forestry, and fisheries, second; median years of schooling of all males 25 years old and over, third; and the proportion of the population Negro, last. The indication is that the per cent total population employed was over 3 times as important as the percentage of total population Negro in explaining the differences. The conclusion is that the Negro as a factor in low southern per capita incomes appears to have been exaggerated and the percentage of the total population employed given too little consideration in the past. More emphasis should be given to the fact that the South is handicapped by being the seed-bed of the nation, that is, by having a high percentage of its population unavailable for employment in the younger age groups.

The net regression effect of each of the factors on state per capita incomes in

[15] Mordecai Ezekiel, *Methods of Correlation Analysis*, 2nd ed., pp. 159–162 and 217.

[16] This method is growing in disfavor with statisticians. Some of them prefer to gain an idea of the importance of the different factors by the effect on the coefficient of determination (percentage of the variance of X_1 explained by all the independent factors included) of the successive elimination of each independent factor from the correlation analysis followed by recalculation of R^2. The size of the decline in the coefficient of determination caused by each variable shows its relative ability to reduce the proportion of the variance of X_1 associated with all factors in the analysis. The effect on the coefficient of determination eliminating the factors in turn is shown below:

X_2. The percentage of the employed labor force (excluding government employees) in agriculture, forestry, and fisheries—from .898 to .824, a reduction of .074.

X_3. The percentage of the total population employed—from .898 to .772, a reduction of .126.

X_4. The percentage of the population Negro—from .898 to .890, a reduction of .008.

X_5. Median years of schooling of all males 25 years of age and older in 1940—from .898 to .881—a reduction of .017.

The ranking of the factors from the standpoint of their power to reduce the composite variance associated with the four factors is as follows: First, percentage of the population employed; second, percentage of the employed labor force (excluding government employees) in agriculture, forestry, and fisheries; third, median years of schooling of males 25 years of age and older in 1940; and fourth, percentage of the population Negro. Therefore, the relative importance of the four factors on state per capita income differences is the same as that obtained by the "beta" coefficients and by graphic plot of the net regression coefficients of each factor, as discussed in the next paragraph.

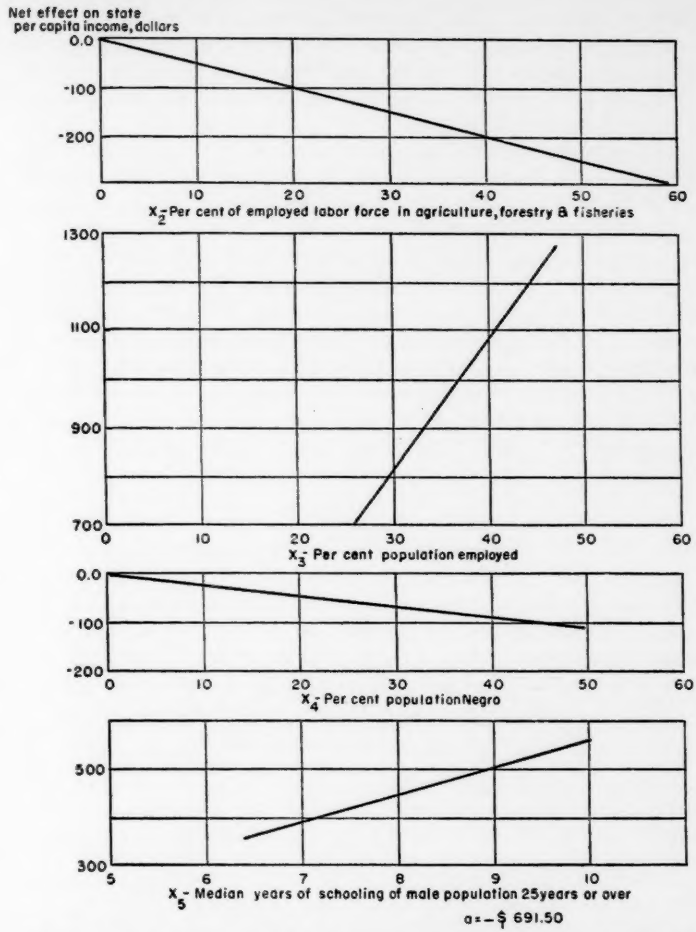

FIGURE 1. NET EFFECT OF FOUR FACTORS ON STATE PER CAPITA INCOME IN 1940

(Net regression coefficients from multiple correlation analysis represented graphically). 1940 estimates for states may be prepared by reading the effect of each factor from the respective graphs, adding, and then subtracting $691.50, the value of "a" shown at the bottom of the chart.

1940 is shown graphically in Figure 1.[17] Since the extreme limits of each factor are included in the regression line, some further idea of the relative importance of each factor can be gained. This is not so accurate a method as the "beta"

[17] Special acknowledgment is due the Bureau of Population and Economic Research, University of Virginia, which drafted the charts in final form.

coefficients or the other method described in footnote 16 because the range in data is only a fair representation and not an accurate one of the dispersion of the factor; but again it is seen that the percentage of total population employed is relatively the most important. All other factors fall in the same sequence of relative importance as shown above.

In order to prepare estimates[18] of the per capita income for any state (only for 1940, however) from the correlation analysis, it is only necessary to substitute the 1940 values of each of the four factors in the equation derived from the correlation analysis as shown at the bottom of Table I; or readings may be made from the graphed regression lines shown in Figure 1. These should be added, and $691.50 deducted. The closeness with which one is able to estimate the 1940 state per capita income figures by either method is shown in Figure 2. The estimates are represented by the regression line and the actual 1940 value by a dot. With the exception of Delaware and New Hampshire the estimates are very close indeed. As a matter of fact the standard error of estimate (from the correlation analysis, Table I) is less than 65 dollars for two-thirds of the states. This is a very narrow range and shows again the great importance of the four factors in explaining per capita income differences between states.

III

The above four factors represent, or better reflect, progress in the technical coefficients of production of the economy. However, the best *single* index of a region's or state's economic development is the extent of urbanization.[19] Cities begin because of some high level economic function's appearing, such as trade need, transportation center, industrial development, etc., and their growth is dependent upon continued pressure from the initial forces and further agglomera-

[18] The deviation of the estimates for 1940 from the actual values in 1940 will increase with the departure of each factor from its mean value. Furthermore, if one attempts to apply the regression equation to years either earlier or later than 1940, the accuracy of such estimates will depend upon how closely conditions agree with those which existed in 1940. In general the greater the deviation in the general price level the greater will the estimate miss the true value. Certain other conditions, such as technological changes, changes in economic organization, introduction of new products, etc., will likewise cause a departure of any regression estimate from the actual value. In fact as the discussion implies the regression equation can be applied only with full validity to reproducing the values for 1940. The analysis is obviously too incomplete to move beyond that stage yet. After more years are added this deficiency will be corrected to a large extent.

[19] Urbanization reflects (although less completely) the four factors above. The more urbanized a state is obviously the less agriculture and the more industry it will have. The educational level of cities is higher; birth rates are lower and hence there are fewer relatively of unemployable children; Negroes of the South have not been concentrating, until recently, in cities of the region, so that to some extent it shows fewer of them. Therefore a measure of relative urbanization measures all of these things although not as efficiently as each factor taken separately as shown by the coefficient of determination (0.69 compared to 0.89), but since it does reflect some of each of these four a higher coefficient of correlation is obtained with it than with either of the four factors treated separately. On the other hand, including a measure of the extent of urbanization as a fifth factor in a multiple correlation analysis would not give as much information about the relationship and the size of the coefficient of determination probably would not be raised because of the high intercorrelation between urbanization and these factors.

tion of activities of associated types. City growth affects farming in the vicinity and, if large enough, in the entire state or region by the demand for perishable farm products—eggs and poultry, milk and other dairy products, and fruits and vegetables. The general degree of urbanization represents not only progress in those factors which are associated with high per capita incomes but also size of individual cities affects its level. This is demonstrated by data released by the

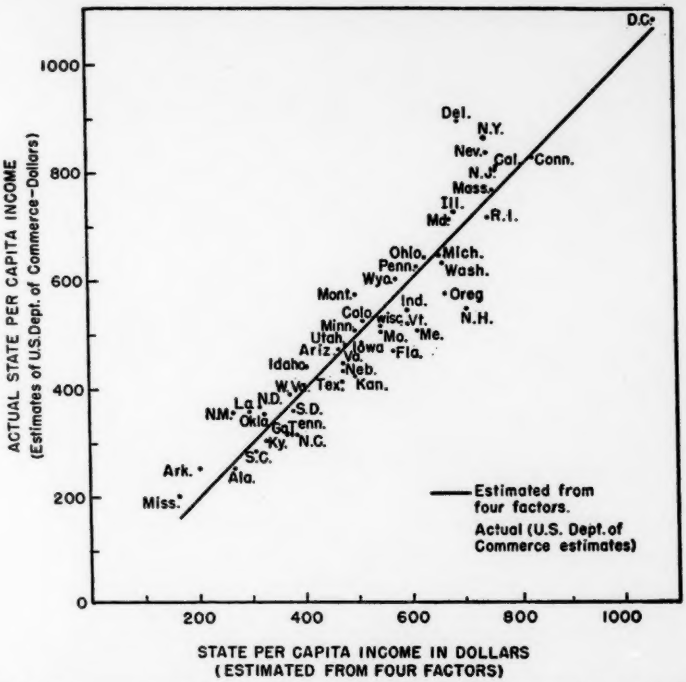

FIGURE 2. RELATION OF 1940 ACTUAL STATE PER CAPITA INCOMES TO STATE PER CAPITA INCOMES ESTIMATED FROM THE MULTIPLE REGRESSION EQUATION WITH FOUR FACTORS

With the exception of Delaware and New Hampshire the actual per capita state incomes in 1940 agree closely with the estimated values which indicates that the four factors included in the regression equation account to a large extent for state per capita income differentials.

Census Bureau[20]; average earnings of families and individuals in 1946 increased with the size of urban place of residence as follows:

2,500 to 49,999 population	$2,495
50,000 to 249,999 population	2,729
250,000 to 999,999 population	2,771
1,000,000 and over population	2,995

[20] *Current Population Reports: Consumer Income*, U. S. Dept. of Commerce, Bureau of the Census, Series P-60, No. 3, June 3, 1948, p. 13.

Thus from the group of smallest urban centers to the largest there is an increase in average earnings of $500, or a 20 per cent differential in favor of the larger urban centers.

Obviously ratios of the total population urban by states do not take into account city size but they do indicate the extent to which the economy has progressed beyond agriculture, and reflect educational level and percentage of population employed. The effect of this factor on state per capita income differentials is given in Figure 3. The regression line which was fitted by the method of least squares indicates a good fit, and only Delaware and Nevada are seriously out of line. The standard error of estimate is $109, or about $44 higher than was obtained with the multiple correlation analysis using four factors. Moreover, $\bar{r}_{12}$ is 0.8281, and the coefficient of determination is in excess of 0.69. This means that this measure of the degree of urbanization, despite its imperfections, explained

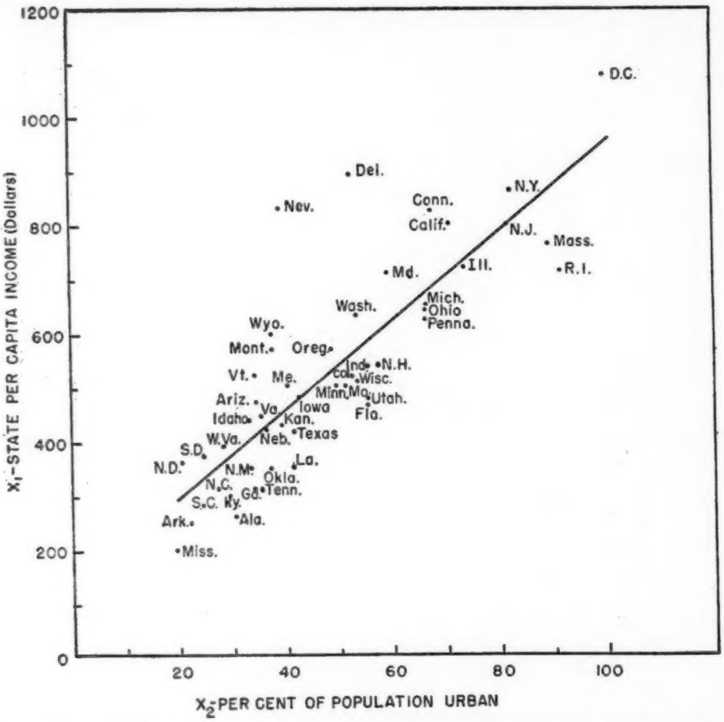

FIGURE 3. RELATION OF PERCENTAGE OF TOTAL POPULATION URBAN TO STATE PER CAPITA INCOME PAYMENTS IN 1940

State per capita incomes increased strongly with the degree of urbanization and, except for two states, Delaware and Nevada, the actual per capita incomes cluster reasonably near the regression line.

69 per cent of the differences between state per capita incomes which existed in 1940, and was only 20 per cent *points* less effective in accounting for the differences than the four factors treated earlier. By appropriate refinements it is expected that a measure of the degree of urbanization can be computed which will be even more effective in explaining the differences.

IV

So much for the static analysis of state per capita income differentials. There remains to be examined the influence of dynamic factors on state differences. The problem is to determine the effect of economic growth and of changes in business conditions. The former refers to the effect of economic progress in states and regions—in the way of increased urbanization, industrialization, and diversification of the economy leading to a more effective utilization of resources, with less risk and uncertainty from the greater diversification of the economy. There is no easy method by which to treat this factor, since income figures by states begin with 1929, thus removing the possibility of a long-run trend and historical analysis. So far as the effects of the business cycle are concerned, some pioneering and important work on the subject has already been published by Vining,[21] which will be referred to later.

Without taking a definite position at this time as to which comes first, an increase in income or an increase in prices, we proceed directly to explore some of the effects of economic growth and of the business cycle. An attempt to indicate the effect of economic progress on state per capita income differences is made in Figure 4 for the 19-year period, 1929 to 1947. A group of states of high economic development, the middle eastern states,[22] with New York State as representative,[23] is compared in relative national per capita income to a group of southeastern states,[24] with Mississippi as the representative state.[25] Two major tendencies

[21] Rutledge Vining, "Regional Variation in Cyclical Fluctuation Viewed as a Frequency Distribution," *Econometrica*, July 1945, pp. 183–213; "Location of Industry and Regional Patterns of Business-Cycle Behavior," *ibid.*, Jan. 1946, pp. 37–68; and "The Region as a Concept in Business Cycle Analysis," *ibid.*, July 1946, pp. 201–218. There are undoubtedly other works; the author of this article has not found it possible to make an exhaustive review of the literature. The above works are referred to since they have proved helpful in the analysis which follows.

[22] Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania, and West Viriginia.

[23] Not so much representative of the middle eastern states as of states highly developed economically and consequently to a very small extent dependent on raw materials industries for income. Therefore, New York State represents the top extreme in economic development; its behavior shows what to expect of the per capita income of other states in swings of the business cycle when they reach a similar development.

[24] Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia.

[25] Not so much representative of some of the comparatively highly developed southeastern states, as Virginia and North Carolina, as of states greatly dependent on raw materials and lagging in economic diversification. Contrariwise with New York State, Mississippi represents about the low extreme in economic development; its per capita income behavior is to a large extent that of a raw materials state, away from which most southeastern states have progressed already, fortunately.

are detectable in the figure. In the first place, the more highly developed states economically have declined in per capita income relative to the nation, while the states comparatively undeveloped economically have gained. And secondly, the business cycle appears to exert an inverse effect on the percentage relationship of state and regional per capita incomes to national per capita income, the former

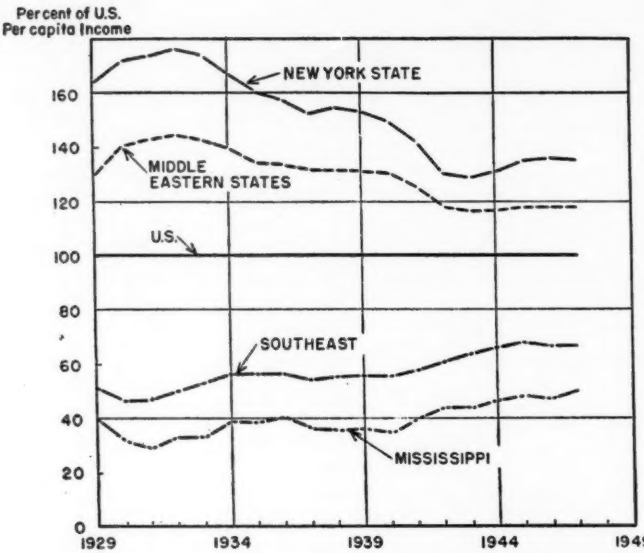

FIGURE 4. SHIFT IN PER CAPITA INCOME OF THE SOUTHEAST AND MISSISSIPPI, AND OF THE MIDDLE EASTERN STATES AND NEW YORK STATE RELATIVE TO UNITED STATES PER CAPITA INCOME FROM 1929 TO 1947

During the period the middle eastern states and New York State declined as the Southeast and Mississippi gained in per capita income relative to the United States. Except recently the middle eastern states and New York moved inversely with the Southeast and Mississippi during the business cycle, the former tending to rise and the latter to decline during depression relative to United States per capita income, and vice versa. Apparently, the states with an intense economic development, as the middle eastern states and New York State, decline less proportionately in per capita income during depression and rise less proportionately during prosperity than the states of inferior economic development, such as Mississippi and similar states, which are dependent to a large extent on agricultural products and raw materials, and the less intensively developed industries such as textiles, lumber, etc.

rising relative to it during depression and the latter declining, and vice versa. The shift in income position over time suggests that perhaps in the 19-year period the southeastern states made greater relative development of their economies than the middle eastern states. There is no direct proof to be offered that this has actually occurred, although observation would seem to support the position

that it has; moreover, being comparatively low in the scale of economic development to begin with the southeastern states with even a small increase in their economies in the aspects making for more industrialization would likely make a relatively larger showing in that respect than the states already at a high level. However, the fact that national per capita income has risen relative to the middle eastern states suggests that other regions than the South are closing the gap in economic development relative to the former.

The tendency of the business cycle to affect differently the regions, or states, more maturely developed economically than those having an undeveloped economy, that is, greatly dependent on agricultural products and other raw materials, has been explored in some detail by Vining.[26] He concluded that the latter "appear to be the lead-off group when a shift takes place in the direction of change of the rate of change of national income. Moreover, they generally constitute the tails of the distribution in the years other than those in which a change of direction is developing."[27] In a second article[28] on this same subject he presented results which tended to support the thesis that during a period of business expansion the poorer regions—the less developed regions and states and those depending greatly on raw materials—show greater percentage increases in state income payments than the wealthier and more highly developed states economically; the former also led in the percentage decrease in state income payments during the business contraction. Of course state income payments are not the same as state per capita incomes but in percentage changes they would be comparable if the percentage changes in unemployment were the same. Unemployment changes are not the same, however, for Vance[29] has shown that the Southeast suffered relatively less unemployment during the depression of the 1930's than the rest of the country, probably because of the comparatively greater dependence of the region on agriculture, where labor does not become unemployed but underemployed. These results of Vance's suggest that the decline in state *per capita* income payments of the South is actually less than they otherwise would be because of the comparatively less unemployment which accompanies the shrinkage in the price and value of the raw materials of the region, which have generally an inelastic demand curve. This means the effects of depression are more widely dispersed in the South and other poor regions by the relatively greater number remaining employed. Apparently the little income that is received in such states is perhaps better distributed than in the wealthier states.

In verification of the points made by Vining, Figure 5 is presented below. In this figure is shown how changes in the general price level are associated with state per capita income payments of *two states which are probably near the ex-*

[26] *Loc. cit.*

[27] *Ibid.*, "Regional Variation in Cyclical Fluctuation Viewed as a Frequency Distribution," *Econometrica*, July 1945, p. 209.

[28] *Ibid.*, "Location of Industry and Regional Patterns of Business-Cycle Behavior," *Econometrica*, Jan. 1946, pp. 63–66.

[29] R. B. Vance, *All These People: The Nation's Human Resources in the South*, pp. 328–330.

tremes in the range of economic development in the nation. As found above it is seen that any given increase in the price level was accompanied by a much greater percentage change in the per capita income of Mississippi than of New York. The regression lines which have been fitted[30] to the clusters of observations

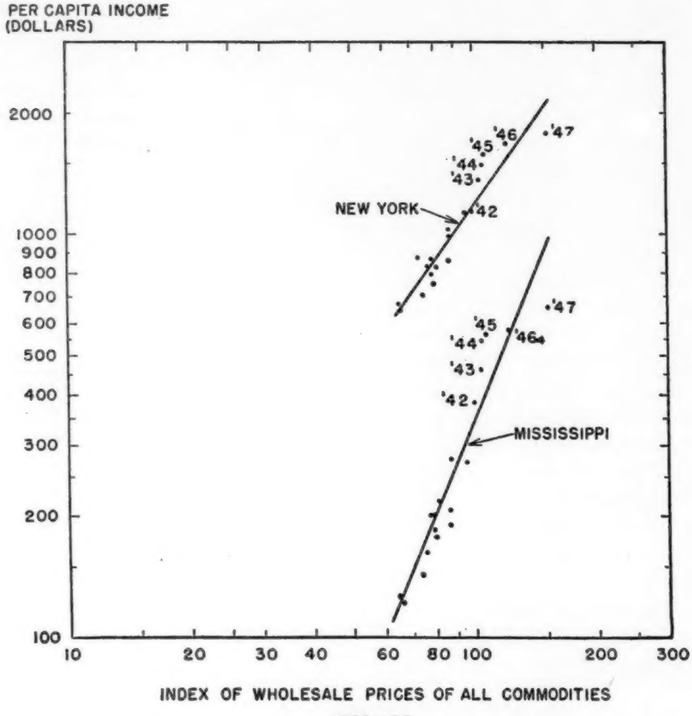

FIGURE 5. RELATIONS OF INDEX NUMBERS OF THE WHOLESALE PRICE OF ALL COMMODITIES TO PER CAPITA INCOME FOR MISSISSIPPI AND NEW YORK STATE, 1929 TO 1947

During the period a given movement in the general price level was accompanied by a relatively greater change in income both in New York State and Mississippi, but the effect on the latter, a raw materials state and one comparatively undeveloped industrially, was much more violent. The regression lines show that an increase in the index from 80 to 120, or 50 per cent, was *associated* with an increase of 78 per cent in per capita income for New York State and 167 per cent for Mississippi.

there given for each state indicate that an increase in the wholesale price of all commodities (1926 = 100) from 80 to 120, an increase of 50 per cent, was *associated* with an increase in per capita income of 167 per cent for Mississippi as

[30] Fitted mathematically with logarithms. The r's with the general price level on state per capita income are as follows: Mississippi 0.9380; New York 0.9402.

compared to only 78 per cent for New York. It is to be noted that per capita incomes departed from the regression line rather sharply during the war period; all other observations fall near the line.

The main conclusions which may be drawn from this section are that over time, because of economic development of the more backward states, state per capita income differentials are tending to narrow, and that the business cycle produces an accordion effect on them, tending to narrow the differences during high business activity and to widen them during low business activity.

V

Our last task in this paper is to give the present status and probable future trends of the factors associated with state per capita income differences, with particular reference to the four variables affecting the differentials in a static sense, for the future course of the general price level, the variable affecting the differentials dynamically, is most uncertain, and promises to continue to be so until economic science has made sufficient progress to produce reliable forecasts. All four factors influencing the state differences statically have changed in the last several decades in a direction favorable to a narrowing of the state per capita income differences, and the trends established forecast further progress in this respect.

Since the settlement of this country the trend has been toward relatively fewer people in agriculture. The percentage of the population thus engaged was lower in 1945 than in 1940 and despite the return to farms in 1945 and 1946, agriculture today occupies a less prominent position in the employment of this country's population than in 1940, and perhaps for the nation almost the same as in 1945. The ratios which indicate the trend follow:

	PER CENT OF POPULATION			
	Rural*		Farm†	
	U. S.	South‡	U. S.	South‡
1800	94	97	—	—
1860	80	90	—	—
1890	65	84	—	—
1920	49	72	30	51
1930	44	66	25	43
1940	44	63	23	39
1945	—	—	18	29

* Sixteenth Census of the United States, 1940. *Population: Vol. 1; Number of Inhabitants*, U. S. Dept. of Commerce, p. 20.

† United States Census of Agriculture, 1945. *Farm Population and Farm Labor*, Vol. II, Ch. V (Reprint), U. S. Dept. of Commerce, p. 292.

‡ Census South includes the South Atlantic, East South Central, and West South Central regions.

In 1940 the South had a rural status about on a par with the nation in 1890, 50 years before; its farm ratio was about the same as the nation's in 1920, 25 years earlier. But the region is making progress in getting away from agriculture,

and another generation should make a great difference. The improvement in this respect from 1940 to 1945 undoubtedly had a great deal to do with the rise in the region's income relative to the nation, shown in Figure 4, and the trend forecasts further rise from the factor (X_2).

So far as X_3 (the percentage of the total population employed) is concerned, statistical light of some consequence can be thrown on the subject. Except during the recent war period, the tendency has been for birth rates to decline in all segments of the nation's population and also in that of the Southeast.[31] This will age the population and result in fewer children 14 years of age and under relatively. There is also a strong tendency toward a higher percentage of females in the labor force.[32] Both these trends will give the nation a higher proportion of total population in the labor force. As to whether the South is closing the gap with the rest of the nation in this respect it is difficult to predict. According to Vance,[33] from 1920 to 1940 the birth rate of the white population of the Southeast showed a greater percentage decline than that of the United States, although the nonwhite population had only a small decline. However, the birth rate of both whites and Negroes was in 1940 still considerably above that of the nation. If the decline in the birth rate of whites continues along with the greater absolute and relative migration of Negroes from the South,[34] the region may be expected to continue to narrow the differential in fertility. Another factor tending to eliminate the differences in the percentage of the population employed between the region and the rest of the country is the more rapid growth relatively of the urban population of the South. This is shown below:

	URBAN POPULATION*			
	South†		United States	
	Per cent increase‡	Percentage of total population urban	Per cent increase‡	Percentage of total population urban
1910	49.8	22.5	39.3	45.7
1920	40.4	28.1	29.0	51.2
1930	38.8	34.1	27.3	56.2
1940	18.5	36.7	7.9	56.5
1947	20.3	43.0	12.7	59.0

* From 1910 to 1940, data are from the 16th Census of the United States, *Population*, Vol. I, p. 20. The 1947 data are from Current Population Reports, Series P-20, No. 9, Jan. 19, 1948, p. 5.

† Census South.

‡ Percentage increase from previous census date.

The situation with respect to the third factor, X_4, the percentage of the total population Negro, is more predictable, for with the exception of the decade 1900–1910 the net movement of native-born Negroes out of the Southeast has

[31] Vance, *op. cit.*, pp. 62–78.

[32] J. F. Dewhurst and Associates, *America's Needs and Resources*, p. 543.

[33] *Op. cit.*, p. 78

[34] *Infra*, footnote 37.

grown greater with each decade.[35] From 1920 to 1940 they migrated from the region in numbers which exceeded the whites,[36] even though the latter outnumber the former in the population of the region by a large margin. This long-time tendency of Negroes to leave the South at a more rapid rate than the whites appears to have persisted from 1940 to 1947.[37] The following shows the declining importance of the Negro in the population of the Cotton Belt since 1880 compared with other states, which have been gaining in the proportion of Negroes since 1920.

	PER CENT OF TOTAL POPULATION NEGRO*	
	10 Cotton Belt states†	Other states
1880	41.1	5.1
1900	36.5	4.1
1920	30.1	4.0
1940	26.6	4.9

* Computed from the Census reports of population.

† Includes North Carolina, South Carolina, Georgia, Alabama, Tennessee, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas.

Thus it is apparent that the Negro is steadily becoming a much less important factor in the southern economy, and of course the race's influence on state per capita income differentials, even though comparatively minor, being the least important of the four factors analyzed, will lessen as further declines occur, which the trends from 1880 to 1940 seem to forecast.

With regard to the fourth variable, X_5, median years of schooling of males 25 years old and over, common observation indicates that the level of education of the country is rising. Furthermore, according to a study of educational progress in the United States by Dewhurst and associates just over one-half of the population aged 5 to 19 years old attended school in 1890, nearly two-thirds in 1910, and about three-fourths in 1940. Expenditures per pupil enrolled increased from $10 in 1890 to $92 in 1940. In 1940, according to data which they compiled from the Census 53 per cent of all persons over 75 years old had completed grade school, 62 per cent of those between 50 and 54 years of age, and 81 per cent of those from 25 to 29 years old.[38] A better and more reliable measure of educational progress in this country during the last generation is shown by certain educational data[39] which they give relative to soldiers in the two recent world wars. In World War I, 77 per cent of the soldiers had completed grade school and only 4 per cent four years of high school; the comparable figures for the soldiers of

[35] Vance, *op. cit.*, pp. 117–120.

[36] *Ibid.*, pp. 119 and 126.

[37] The Census Bureau shows, in Series P-20, No. 9, Jan. 19, 1948, an increase during the 8-year period of 5 per cent in the white population of the South and a decrease of 4.8 per cent in the nonwhite population. In view of the higher fertility of Negroes of the South it would appear that they are continuing to migrate from the South more rapidly than whites.

[38] *Op. cit.*, pp. 300–305.

[39] *Ibid.*, p. 302; data are from the U. S. Office of Education.

World War II are 31 per cent and 23 per cent, respectively. The typical enlisted man in the former war had completed only 7 years of schooling while in the latter war he had completed 10 years.

As with the other three factors, several indices of educational progress in the South indicate that the region is likewise narrowing the disparity in this factor with the rest of the country. This is shown by data in Table II. Three measures of progress—average length of school term, average number of days attended per pupil enrolled, and current expenditures per pupil enrolled—are shown. In all three a sharp upward trend is apparent for the approximately 25-year period. Furthermore, each measure has had a more rapid improvement relatively than the rest of the country, as indicated by the percentage each factor is of the rest of the country. In 1945–46 the average length of the school term and the average days of attendance by the enrolled pupils were 96 and 95 per cent respectively of the rest of the nation. Of course there are otherwise large differences between the two parts of the nation as regards number of grades through high school, the curriculums, quality of instruction, and quality of school facilities, but the important fact is that the South is closing the gap in length of school session and in the extent to which it is used. In current expenditures per pupil the story is much the same; however, despite good progress in it from 1919–20 to 1945–46, the region was in 1945–46 still laboring under an overwhelming disparity of nearly 50 per cent. But from the standpoint of this analysis the region is gaining, and the momentum indicates additional large gains in this regard in the next generation.

TABLE II

Measures of Educational Progress in the South† by Specified School Sessions, and also Expressed as a Percentage of Rest of the Country*

School session	Average length of school term		Average number of days attended by pupils enrolled		Current expenditures per pupil enrolled in public schools	
	Number of days	Per cent term is of rest of country	Number of days	Per cent days attendance is of rest of country	Average expenditures per pupil	Per cent expenditures per pupil is of rest of country
1919–20	136	79	93	70	$18.03	34
1929–30	154	86	117	77	34.41	38
1939–40	164	92	136	87	39.63	42
1945–46	172	96	145	95	72.20	52

* Compiled from the Biennial Surveys of Education of the United States for the respective years.

† Includes Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia.

Of the five educational indices measured only the percentage of the population 5 to 17 years of age enrolled in public and private schools showed to the disadvantage of the South. Data for this age group and that of the one from 18–24 years are as follows:

	Percentage of age group 5 to 17 years old enrolled in public and private schools*		Percentage of age group 18 to 24 years old enrolled in college*	
	South	Rest of country	South	Rest of country
1919–20	91.4	96.1	2.4	4.7
1929–30	95.6	99.5	4.7	8.1
1939–40	88.5	97.1	6.8	10.0

* Basic data were obtained from the Census Reports of Population and from the Biennial Surveys of Education for the respective years.

The data indicate that after gaining on the rest of the country in relative enrollment in the age group 5 to 17 years old from 1919–20 to 1929–30, the South had a decline from 1929–30 to 1939–40 along with the rest of the country but much more rapidly than the latter. No adequate explanation can be offered at this time why there was a fall in relative enrollment at all, or for the relatively greater decline in the South.

Further study of the data given above discloses another favorable factor in the South's relative educational improvement. It is seen that the percentage of the age group 18 to 24 years old enrolled in college has shown a relatively greater increase during the period, although even in 1945–46 the South had just over two-thirds as many college students enrolled relatively as the rest of the country. Again it should be noted that this favorable showing does not take into account the differences long recognized in quality of instruction, facilities, and graduate studies. There have been improvements in these also but no measures are readily available to demonstrate it in fact or in degree.

The conclusion is that the South is undoubtedly gaining on the rest of the nation educationally, although in some indices the region has a long way to go yet. The indication is that the South will continue to narrow the differences; and if the proposed federal legislation in aid of education, which would allocate relatively more funds to the low income states, is enacted, it is certain that this tendency would be greatly accelerated. All the ramifications, however, of a higher level of education in the region cannot be traced out in this paper. It should have a favorable influence on health, industrialization, race relations, and southern politics; and last but not least will reinforce the tendency of the other factors analyzed heretofore to reduce state per capita income differences with the rest of the country.

VI

In brief summary, this article has analyzed some of the factors which are associated with state per capita income differences; the trends in these factors and how they have affected state differences recently, and probably will affect them in the future. Four factors are shown by correlation analysis to be highly related to state per capita income differentials. They are per cent of the labor force (excluding government employment) employed in agriculture, forestry, and fisheries, per cent of total population employed, per cent of population Negro,

and median years of schooling of males 25 years of age and over. These four factors compositely explained 89 per cent of the differences in state per capita income in 1940. Per cent of the total population employed was the most important factor in explaining the differences, and the per cent of the population Negro the least. Thus the idea that the South's low incomes are largely attributable to the Negro is not substantiated; however, the analysis as conducted tends to minimize the race's influence because of inability to include with Factor X_4 (the per cent of the population Negro) its indirect influence through intercorrelation with the other three factors, being as in the case of education an important reason for the region's disparity in some of the factors influencing directly per capita income.

Trends in state per capita incomes between 1929 and 1947 establish two very important relationships. In the first place, state per capita income differences between the southern states and the rest of the United States narrowed during the 19-year period, presumably because of more rapid economic development relatively in the South than in some of the already highly developed regions, such as the middle eastern states. And secondly, during the major phases of the business cycle the states of low economic development, such as most southern states, showed greater changes in state per capita income than the states of high economic development, such as the middle eastern states, the former rising more rapidly in the upswing than the latter, and conversely during the downswing. Therefore, it appears that the major phases of the business cycle produce an accordion effect on the state per capita income differential between the two extremes in economic development, narrowing it during the rising phase and widening it during the declining phase.

Analysis of the progress of the factors influencing state per capita income shows that all four have made a more rapid change relatively in the direction favorable to the region's reduction in the differential than in the rest of the nation. This indicates that improvement in these factors has been for some time exerting pressure on state per capita income differences and on the basis of past trends forecast further narrowing of them. In conclusion it appears that the future holds much promise for further gains in this respect, provided no important retrogression in the politics of the region occurs.

SOME COMMENTS UPON THE NORTH-SOUTH DIFFERENTIAL

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I

In a recent article published in this Journal[1] Professors Sufrin, Swinyard, and Stephenson attempted to account for the North-South annual earnings differential by analyzing this variable in terms of phenomena which characterize the two geographical regions. Among the chief annual wage determinants considered were the relative size of urban centers, number of manufacturing establishments in the local labor market, number of employees per establishment in the community, and the productivity of labor. "Value added by manufacture" was used as an index to the last determinant. The authors concluded that the lower annual earnings in the South (and, obversely, the higher annual earnings in the North) are attributable to "the product of two factors: (1) size of capital investment in the market, and (2) productivity of the factory employing the particular employee."[2] The purpose of this article is to examine the validity of the bases upon which these conclusions rest and to offer at least one other explanation of the North-South annual earnings differential—a fundamental cause which seems to have escaped the attention of the authors.

II

On many counts it is inadmissible to infer a causal relationship between the earnings of labor and size of city, number of manufacturing establishments per city, size of investment, or number of employees per establishment. The statistical problems posed by the attempted correlation of labor earnings with any one of these variables will be readily recognized as almost insurmountable by students of statistical analysis. When we compare the earnings of labor in urban centers that fall in various size groups, we, perforce, compare *different* industrial societies. The same problem must be confronted when we attempt to account for annual earnings differentials in terms of the number of manufacturing establishments, the amount of investment in the local market, or the number of employees per firm. When we analyze labor markets characterized by heavy investment, population concentration, large numbers of manufacturing establishments, and large numbers of employees per establishment we immediately shift the analysis to such urban centers as Pittsburgh and Detroit; when we analyze labor markets characterized by light population concentration, fewness of employees per establishment, etc., the analysis is shifted to an entirely different economic environment. With the exception of such instances as those in which new firms have not expanded to the point of optimum scale, we do not find a "small" automobile

[1] *Southern Economic Journal*, Oct. 1948, pp. 184–190.

[2] *Ibid.*, p. 190.

or electrical machinery plant. On the other hand, small textile factories may be found in many small cities, and are largely found in the small cities of the South. Hence, it would appear that a comparison of average annual incomes of labor in the North and South cannot yield meaningful results unless cognizance is taken of the fact that the two areas differ with respect to economic structure. When this is done, amount of investment, size of city and establishment, etc., do not, as the authors state, account for the North-South average annual income differential; rather, these characteristics of a labor market are themselves attributable to a more fundamental phenomenon—the types of industry which dominate each of the two geographical regions. The causal force does not proceed from the above variables to the regional average annual income differential but from the structure of the regional economy to these variables *and* average annual incomes. They all stem from a common cause. Therefore, the authors' argument that North-South income differentials are due to differences in the size of capital investment in the respective regional markets is only superficially true. The difference in size of capital investment in urban centers between the two regions is due in turn to the difference in the nature of the investment. For purposes of policy it is extremely important that this distinction between the mere *size* of local investment and its *nature* be made. Most economists who have studied the South as an economic region would agree that personal incomes in that region will be increased not so much by attracting further investment in industries already concentrated in the South, but by attracting investment in industries of an entirely different nature. The basis for this argument will be presented in Part III.

The authors cite differences in productivity of the factories that employ the particular employee as the remaining factor that accounts for the North-South average annual income differential.[3] The proof of this thesis is to be found in "the noticeable relation between productivity groups and average wages."[4] Productivity was measured in terms of "value added by manufacture." The authors concede that this is a rough and ready measure of productivity of labor. In strict logic, it could be argued that it is inadmissible to attempt to explain average annual income differentials by demonstrating a fairly high degree of correlation between average annual wages and "value added by manufacture" for the two regions. For the economy as a whole, wages and salaries accounted for over 50 per cent of "value added by manufacture" in 1939. In a large number of individual industries, this percentage is much higher. Hence, the statistical operation merely correlates one variable, A, with another variable, A + B. The first variable often constitutes a very high percentage of the second.[5] But, what is equally important, "value added by manufacture" cannot be viewed as an

[3] *Op. cit.* p. 190. The authors did not clearly differentiate between productivity of labor and productivity of all factors of production as a combination. Compare pp. 187–88 and p. 190.

[4] *Ibid.*, p. 188.

[5] The wage bill accounted for 75% of "value added" in a great number of industries in 1939. See *Census of Manufactures*, Bureau of the Census, 1939.

index to the relative productiveness of labor groups in any meaningful sense. To compare the productivity of two labor groups, even in terms of physical output, it is essential that all labor operate under identical conditions.[6] Simply to compare regional "value added by manufacture" aggregates tells us nothing of the efficiency of the two regional labor groups. It merely reveals that the value created per worker by all factors of production in some types of industry is more or less than the value created in others. If this is all that the authors meant to convey, the conclusion that average annual earnings of labor vary with the average value produced in the industries that employ the labor is hardly subject to criticism but, in itself, this conclusion is not very informative. It does serve as a convenient point of departure from which to embark upon the following argument.

III

The principal reason why average annual wages in the South were so far below average annual wages in the North in 1939 may be found in the differences in economic structure of the two regions. This is quite clearly brought out in the accompanying chart. If we plot the percentage of North-South workers[7] engaged in the 19 major industrial classifications that are at work in the South against the annual income received per wage earner in those industrial classifications, a relationship between these two variables is clearly indicated—the lower the percentage of total workers in the South the higher the average income. Of those industries that pay relatively high annual wages, e.g., the automobile, transportation, electrical and non-electrical machinery industries, rubber goods, etc., less than 10 per cent of the total workers employed in both regions are located in the South. On the other hand, the lowest paying industries in the American economy are fairly heavily concentrated in the southern region. Fifty-six and five-tenths per cent of the wage earners employed in tobacco manufacturers are employed in the South; 73.4 per cent of the wage earners engaged in lumber and finished lumber products; and 45.1 per cent of the wage earners engaged in the production of textile mill products. These are all low wage industries. The only exceptions to this indicated high correlation between low annual wages and high percentages of employees located in the South are the petroleum and coal products industries, leather and leather products industries, and the apparel and other finished products industries. The first industrial group is a high annual wage industry and a fairly high percentage of the total workers in the two regions in this industrial group are located in the South (38.8 per cent). On the other hand, the latter two industrial groups pay low annual wages and a fairly low percentage of these workers are located in the South (leather and

[6] For this alternative method of North-South labor productivity comparisons see Jesse W. Markham, "Regional Labor Productivity," *American Economic Review*, March 1943. See also Richard A. Lester, "Effectiveness of Factory Labor: South-North Comparisons," *Journal of Political Economy*, Feb. 1946.

[7] Total workers include all workers located in the following three areas as defined by the Bureau of the Census: (1) Northeast; (2) North Central; and (3) South.

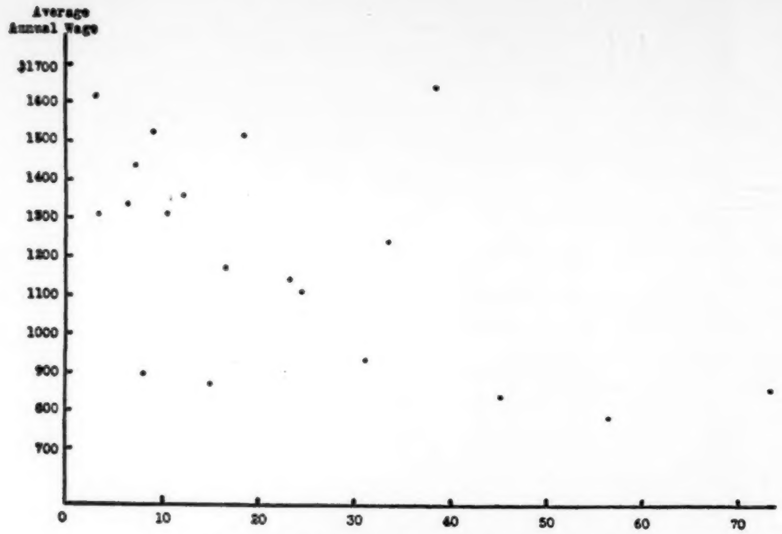

CHART I. RELATIONSHIP BETWEEN AVERAGE ANNUAL WAGES AND PER CENT OF TOTAL NORTH-SOUTH LABOR FORCE IN THE SOUTH BY MAJOR INDUSTRIAL GROUP, 1939

Pearsonian Coefficient of Correlation = −.554

Source: U. S. Bureau of the Census

TABLE I

Per Cent of North-South Labor Force in the South and Average Annual Income by Major Industrial Group, 1939

INDUSTRIAL GROUP	TOTAL NORTH-SOUTH LABOR FORCE (000 OMITTED)	PER CENT IN SOUTH	AVERAGE ANNUAL WAGE
Food and kindred products	965	24.6	$1,110
Tobacco manufactures	106	56.5	783
Textile mill products	1,155	45.1	839
Apparel, etc	752	15.0	871
Lumber and timber basic products	439	73.4	861
Furniture and finished lumber products	331	31.0	936
Paper and allied products	306	16.7	1,171
Printing, publishing, and allied products	565	18.6	1,521
Chemicals and allied products	417	33.8	1,241
Products of petroleum and coal	175	38.8	1,648
Rubber goods	148	6.7	1,337
Leather and leather products	359	8.1	898
Stone, clay, and glass products	313	23.3	1,146
Iron and steel and their products except machinery	1,212	12.4	1,359
Nonferrous metals and their products	254	10.6	1,308
Electrical machinery	365	3.6	1,309
Machinery (except electrical)	665	7.4	1,431
Automobiles and automobile equipment	560	3.2	1,620
Transportation equipment (except automobiles)	801	9.4	1,523

Source: 1939 Census of Manufactures, *U. S. Bureau of the Census.*

leather products, 8.1 per cent; apparel and other products from similar materials, 15 per cent).

IV

By way of summary, it would seem that certain conclusions tentatively reached by Professors Sufrin, Swinyard, and Stephenson should be modified and extended:

1. The North-South annual wage differential is not so much a result of the smaller *size* of capital investment in southern labor markets as it is a result of the *kinds* of industries in which investment has taken place. This has a very important policy implication: namely, the South should encourage the location of the newer and heavier industries in the South rather than attempt to induce more investment in the lower paying textile mill, lumber, and tobacco products industries already heavily concentrated in the South.

2. If "value added by manufacture" is, in some technical sense, to be used as an index of the productivity of labor, the correlation between annaual wages and "value added" in no way explains the regional wage differential. "Value added" is principally wage payments; hence the correlation is, in this instance, virtually meaningless. If, however, Professors Sufrin, Swinyard, and Stephenson are attempting to demonstrate that annual wages in the South are lower than annual wages in the North because the average southern laborer produces less *value* than the average northern laborer, they are substantially correct. Again, however, the fundamental cause will not be found in the lower physical productivity of southern labor, the average size of southern cities, or the amount of investment or number of establishments per southern labor market, but in the types of investment that have been made; i. e., the nature of the industries that have located in the South. The observable variation in the above variables, along with the variation in annual earnings, between the North and South seem to stem from this fundamental cause.

It is highly probable that the South has substantially increased its relative share of the high annual wage industries since 1939. When the forthcoming *Census* is made available, it would be of considerable interest to compare the current relationship between annual wages and the industrial composition of the South's economy with that presented in this paper based upon 1939 data.

AN IDEOLOGY FOR A LABORISTIC ECONOMY*

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Capitalism is gradually vanishing from the American scene. According to the *Columbia Encyclopedia*, capitalism is "the economic system characterized chiefly by the relatively few, who by their ownership of capital, control most of the production, distribution and credit." Twenty years ago that definition would have aptly characterized the United States. Then capitalists not only directly controlled a large proportion of economic activities but even were able to get one of their representatives elected president.

Today, their position is far different. Much of the direct control of economic life has shifted into the hands of government and labor unions. In 1947 more than a fifth of the expenditures of the nation's economic budget belonged to government, but its powers to dominate economic life go far beyond what the statistics suggest. It exercises control over banking through the Treasury, the Federal Reserve, and a host of other agencies; over business through the Federal Trade Commission, the Anti-Trust Division, "voluntary" rationing of scarce supplies, and the National Labor Relations Board. For over 16 years government policies have been inimical to business interests. Perhaps the most damaging blow to capitalists has been the steeply progressive income tax, but there have been many others. Not the least of them was the legislation which encouraged the growth of labor unions from 3.6 million members in 1935 to 14.3 million in 1947. Management may still manage industry, but labor now severely circumscribes its freedom of action.

Nor is this any temporary swing of the pendulum. Though union organizing has temporarily slowed down, potential additions to membership still number in the millions. In the political field, union members and their families already have enough votes to dominate any national election. If every union member has a wife or other relative who will vote the same way he does, then labor may be considered to have over 28 million votes, or considerably more than a majority of the votes cast in the 1948 presidential election. The CIO has considerable experience in mobilizing the potential voting strength of labor and made a significant contribution to the reelection of President Roosevelt in 1944 and of President Truman in 1948. Though the end result is still in the distant future, the United States appears to be evolving into what Professor Slichter calls a laboristic state—i. e., a state in which labor and its leaders are the largest single influence.[1]

* The author has some acknowledgments to make, but he does not want to imply that those who helped him necessarily to agree with the general point of view presented here, much less with statements about details. In spite of differences of opinion—and also *because* of these differences—Professors David McCord Wright, William H. Nicholls, and George W. Stocking have been extremely helpful.

[1] Sumner H. Slichter, "Are We Becoming a 'Laboristic' State?" *New York Times Magazine*, May 16, 1948, pp. 11, 61, 63–66; *The American Economy*, pp. 7–13. The definition of the

This development imposes on labor leaders the obligation to ask themselves what kind of economy they want to create. So long as capitalists predominated over labor, unions could quite properly confine themselves to fighting business interests on such opportunistic matters as union recognition, wages, hours, safety conditions, workmen's compensation and the like. But when the time comes that labor predominates over the capitalists, labor will have the possibility of molding the economy on a broader plane.

So far there is no clear answer to the question of what labor will do with its growing power. Union leaders have not yet agreed upon an ideology for the laboristic economy.[2] Plainly the capitalistic ideology of laissez faire, which with modifications has served business interests for so many years, will not do. Neither has labor in the United States shown much inclination to adopt the socialistic or communistic ideologies.

By ideology is here meant a unified conception of an ideal economy which serves as a frame of reference for judging particular policies and measures. The importance of an ideology is far-reaching. Not only have the laissez faire, socialist, and communist pictures of what the best economy would be like had important historical consequences, but the ideology adopted also makes a great deal of difference in day-to-day operations. Thus, an American socialist favors almost any increase in government control over economic life as a step in the direction of the ultimate goal, and the conservative opposes almost any increase in government control as a step away from the goal.

For many economists, the development of a laboristic economy poses an intellectual dilemma. Probably a majority believe that allocation of economic resources through competitive pricing maximizes consumer satisfaction. Most, however, would modify the classical concept of laissez faire to permit some redistribution of incomes through a progressive income tax and to stabilize employment through monetary and fiscal policies; and they would agree that there are other values besides the purely economic one of maximizing consumer satisfaction. Here is the rub. For among the noneconomic values, most economists would include the services labor unions render in protecting individual workers from arbitrary hiring and firing and in providing machinery for handling their grievances. Few would advocate destroying unions. But unions do not and cannot confine themselves to policies economists consider desirable. They set monopolistic wage rates which undermine the competitive pricing mechanism; they give the price level an inflationary bias which tends to create additional maladjustments; they set up barriers to technological change which impede economic progress; and they make demands for higher wages without increased prices

laboristic state at this point is intentionally vague inasmuch as labor within wide limits has a choice of ways in which it can be the largest single influence, e.g., guild socialism, communism, socialism of the British type, etc. At a later point in this article the use of the term will be limited to refer to a state in which labor exercises its power through collective bargaining (without taking over the management of business) and organized use of labor's votes, both by electing its own candidates and by rewarding friends and punishing enemies.

[2] The CIO's 1948 convention unanimously approved a quasi-socialist program, but the AFL leaders at their convention paid lip service to free enterprise.

which eat away the usefulness of the profit motive. Economic values and noneconomic values conflict.

The conflict becomes especially acute for those economists who publish their conceptions of the ideal economy. If they make concessions to labor unions, their frameworks cease to be ideal from the point of view of an economist. If they use their ideals as a springboard for criticizing unions, they virtually give up hope of getting their ideals adopted.

The work of the late Henry C. Simons illustrates these difficulties. He gave as good a summary of the problem of union monopolies as is to be found anywhere.[3] What was his solution? He had none. "Libertarians," he conceded, "can offer no specific for the affliction of labor monopoly. They may propose to deal intelligently with other problems, in the hope that this one may somehow be mitigated or rendered less intractable by progress on other points."[4]

The present writer has no criticism to make of libertarians who, like President Truman in the 1948 campaign, choose to hope against hope. But it is nevertheless desirable for those of us who dislike socialism[5] to work out a program based on the assumption that some economic values must be sacrificed for the noneconomic values of labor unions. The task is to frame an ideology for a laboristic economy. The purpose of this article is to present such an ideology. The writer does not want to be interpreted as advocating this or any other program. Rather, he is exploring an avenue of approach toward a problem which faces both economists and labor. In doing so, it will frequently be necessary to adopt the point of view of labor leaders who are anxious to obtain more power. In doing so, neither approbation nor disapprobation of their ambitions is implied.

Can a laboristic ideology be devised which is consistent with the general welfare? Or is there such a conflict between the interests of labor and the interests of the rest of the community that a laboristic economy implies exploitation of the latter by the former? Of course a laboristic economy will be operated directly in the interests of the workers. But it will need the products and services of farmers, professional workers, civil servants, business managers, and savers. In principle, therefore, it will pay the laboristic economy to treat the remainder of society well. Nevertheless, society as a whole will need to impose limits on the powers of unions. These limits are specified below.

I

What are the prerequisites for a laboristic ideology? First, it must be rooted in the direct self-interests of the working class, else it has no chance of adoption.

[3] *Economic Policy for a Free Society*, p. 35.

[4] *Ibid.*, pp. 35–36.

[5] The writer's own reasons for disliking socialism are beliefs that (1) there are diseconomies of large-scale production incident to controlling a vast and complicated economic mechanism which would more than nullify the obvious economies; (2) the advance of technology and innovation would slow down under socialism (see text below); and (3) as a practical matter, bureaucracy in the United States is usually less efficient than private enterprise. Those who believe socialism is not compatible with democracy have still another reason for rejecting it.

Second, in view of the difficulty labor has in mobilizing its full voting strength, it should appeal to groups outside the working class. Third, it must have a distinctive political program which differentiates it from the stock-in-trade of professional politicians; otherwise, it could not serve as a vehicle for satisfying the political ambitions of labor leaders. Also, it should assume a democratic form of government, avoid getting mired in controversial detail, and be reducible to a few simple ideas or slogans; and it should specify restraints to be imposed on the power of labor. The suggested ideology is described in the six subsections below.

1. It is not part of the purpose of this article to argue the case for the ideology presented here. Those who do not like unions will not like a laboristic economy. But if we are going to suggest a constructive program which labor is to carry out, it must include as one of its elements the strengthening of the labor movement until it dominates economic and political life.

The welfare of the rest of the community depends on achieving this objective to a much greater extent than most would be willing to concede. Unions already wield enormous power. But power without responsibility is bound to be disruptive. Labor can pursue conflicting objectives and ride roughshod over the legitimate interests of the remainder of society (incidentally undermining its own long-run interests), so long as the president and party in power regard it as no more than the strongest of the pressure groups; but an avowedly labor president and Congress, sobering under responsibility, would be able to take a stronger stand against abuses of labor's power. The British trade unions in the postwar years have swallowed many a bitter pill which they would never have taken on the prescription of a Conservative government.

Not only do large responsibilities increase the chances of adoption of a constructive program, but also a constructive program would increase the chances of achieving large responsibilities. One of the greatest weaknesses faced by labor in the 1948 campaign was its concentration on a purely negative issue—repeal of the Taft-Hartley Act. It cannot expect to control the votes of even its own members without an appealing program and ideology.

The strengthening of unions' power does not necessarily imply that they will disrupt the present division of functions between management and labor. On the contrary, technological advance (cf. below) will best be stimulated by retaining a large number of competing managements rather than consolidating the management of an industry in the hands of the union.

2. Almost everybody now believes in planning.[6] Government plans through numerous agencies. Labor plans through its unions. Farmers plan through their National Grange, American Farm Bureau Federation, and National Farmers' Union. Business plans through its trade associations, the Chamber of Commerce, the National Association of Manufacturers, and the Committee for Economic Development. Although it is certainly too pointed to say that this constitutes a repudiation of Adam Smith's invisible hand, it does imply a changed point of view from the days when unbridled free enterprise built eight railroads between Chicago and Omaha.

[6] Lewis L. Lorwin, *Time for Planning*. Planning does not necessarily mean the 100% planning of socialism or anything nearly as drastic.

The question, then, is *not* to plan or not to plan, but whose plans will be carried out. Under the laboristic ideology, the government would implement plans for maintaining aggregate employment, for advancing technology, for controlling or operating a limited number of industries (or smaller units) in accordance with other parts of the ideology, and for social security, housing, conservation, etc. In addition, the government will draw up broad plans for the economy to give labor, business, and farmers a guide for adjusting their own plans to the needs of the entire economy.[7]

Planning by labor will require a shift in the outlook and possibly also the organization of unions. So long as labor was underdog in its struggles with capitalists, it was appropriate to applaud any successful self-seeking by a union as a gain even when the results were detrimental to the standard of living of the working class as a whole. Since the support of the workers depended rationally or irrationally on the ability of the union to get higher pay rates, pay increases which raised housing costs unreasonably, jeopardized the prosperity of 1936–7, or spurred on the post-World War II inflation could properly be condoned. But in a laboristic economy, unions will be solidly entrenched. They will even be in a position to dictate the share of the national product which can be retained by stockholders. Union policy must be dictated by new considerations—to regard other elements of society, including businessmen, owners of securities, professional workers, and farmers as performing services which the laboristic economy must reward adequately to protect the long-run interests of labor; not to allow relative prices and wages to deviate from those consistent with an ideal allocation of resources far enough to impair seriously the standard of living; not to increase money wage rates so rapidly as to cause inflation; to encourage technological progress.

Power in American unions is so decentralized that it is inevitable individual unions will deviate from any policy laid down by the AFL, the CIO, or a merger of the two. It would not be desirable for the AFL-CIO to obtain power to enforce their decisions. But it would be desirable for labor to build a consciousness of its common interests in technological progress and a good allocation of resources, to regard unions which seek their own gain at the expense of the rest of labor as traitors, and to encourage developments (such as modernization of building codes in the housing industry) which nullify disloyal conduct.

As labor will be dominant, farmers and capitalists will have to adjust their plans to those of labor and government. However, the spirit of the laboristic ideology is consonant with trends in agricultural planning so that the basis exists for profitable log-rolling in Congress with representatives of farm interests. Whether such an alliance could survive in the face of labor's interest in cheap food remains to be seen.

Businessmen will do well to consider their position carefully. No doubt they will be disposed to try to regain their lost position of dominance, but if they are realistic they will realize that a laboristic economy which leaves to them the ad-

[7] Leon H. Keyserling, "The Economic Test: Will We Act in Time?" *New York Times Magazine*, June 13, 1948, p. 64.

ministration of business and the chance to make reasonable profits is better for them than socialism—and that will be the only practicable alternative.

3. The extent to which the working class can improve its standard of living at the expense of the rest of the community is limited. If the total amount of personal consumption goods brought to market in 1947 had been evenly distributed among the 60 million persons who work for a living, each one would have received only $2750 worth—hardly sufficient to support a family on a munificent scale. If we assume that half the 60 million can properly be considered members of the working class and divide up the 1947 total corporate profits after taxes among them, each would get only $400 extra—before personal income taxes.[8] When allowance is made for the disruption to the economic mechanism which such equalitarian measures would cause, the room for bettering the lot of labor in this direction is meager indeed.

Individual unions might believe they could fare better by recklessly pursuing their own gain to the detriment of everybody else including other unions. But for most unions, if not all of them, this is pure delusion. By subordinating the desire of each for a larger proportion of the pie, they can together increase the size of the aggregate pie and the piece allotted to nearly all of them. Those writers who think that each union must necessarily operate to the detriment of all the others in effect deny that union leaders and members can perceive their own long-run interests. With them the writer disagrees. The short-run sacrifices voluntarily shouldered under the European Recovery Program show that the American people have a large capacity for understanding where their true interests lie.

By comparison, the possibilities of more income through technological progress are enormous. In the 18 years between 1929 and 1947 real disposable income per capita rose 37 per cent.[9] In the 40 years between the decade 1879–88 and the decade 1919–28, net national product per capita nearly doubled. Moreover, the figures understate the real gain inasmuch as they make inadequate allowance for new products and more leisure. Unlike equalitarian measures, which can be taken but once, the rise in income from technological advance tends to cumulate in compound interest fashion. The prime problem of constructing an ideal economy, therefore, is to devise institutions and measures likely to achieve the most rapid rate of invention and innovation.[10]

[8] The inventory valuation adjustment has been deducted from corporate profits.

[9] Council of Economic Advisers, *The Economic Situation at Midyear 1948* (appended to *The Midyear Economic Report of the President, July 30, 1948*), Washington, 1948, Appendix B, p. 82.

[10] The ideology of the classical economists was just as well devised to encourage innovation (in fact, this was perhaps the greatest achievement of laissez faire in practice) as to achieve the optimum allocation of resources; yet the nature of the classical and neoclassical economics has led economists to put more emphasis on the latter, their discussions concentrating on such subjects as free trade, monopoly, and the evils of advertising, to give a few examples. (There are numerous exceptions, such as the writings of Joseph A. Schumpeter and David McCord Wright.) This needs correction. A demonstration that welfare is best maximized within a given technology by equating price to marginal cost may be unimportant if the institutional framework best suited to advancing technology follows somewhat different price policies. However, this writer does not mean to belittle either neoclassical economics or the importance of a reasonably good allocation of resources.

Accordingly, the laboristic economy calls for a large area in which business is privately owned and operated in competition with other private business units in order to keep in operation an optimum number of centers of initiative and research. This policy would in some cases conflict with other parts of the ideology, so that there would be room for considerable differences of opinion as to just how far the encouragement of free enterprise should be pushed. But in any event the criterion that there should be full freedom for private citizens and corporations to try out new methods and products in open competition with old methods and old products would be an important check on socialization of industry.

This does not mean that perfect competition is necessarily the ideal. A large number of small units producing automobiles, e. g., would probably not maintain as efficient research organizations as an industry dominated like the present one by three giants. And the absence of quality differentiation implied by the concept of perfect competition could not be achieved in many lines without stifling an important avenue of progress. There may even be something in the greatly overworked argument that advertising often is necessary for the introduction of new products. At any rate, the laboristic economy should be more concerned with technological competition than price competition, more concerned with a rapid rate of progress than the equating of marginal cost with price.[11]

Individual unions must encourage rapid innovation in the companies and industries they deal with. This means compelling management to accept that kind of union-management cooperation in which the workers actively contribute to reducing costs with adequate protection against technological unemployment and a fair distribution of the gains.[12] Union policy would also be interested in the size of the firm's research department and in charges that improvements are being held back. Workers whose jobs are abolished must either be kept on until normal turnover creates jobs for them or be laid off in reverse order of seniority and receive an adequate dismissal payment. The owners of the business must receive no more (and no less) of the gains than is necessary to provide sufficient incentives to keep the firm and the economy advancing rapidly. Ordinarily a fixed proportion (say 50 per cent) of the gains should go to the workers immediately affected in the form of higher wages in order to provide the incentive for continuing the search for ways to reduce costs, the remainder going to all the workers in their role of consumers in the form of lower prices. In some cases, however, such a division of the gains would result in an excessive distortion of the allocation of resources. Where more workers are needed in the industry, wages could be pushed up faster in order to attract them. Where advance is abnormally rapid, or where wages manifestly get out of line with what a worker with similar skills gets paid elsewhere, the proportion of technological gains passed on to consumers should be increased.

It may seem naïve to suppose that unions would treat consumers so generously. Such a result would depend on two circumstances: development by labor of a

[11] This, however, does not imply abandoning enforcement of the antitrust laws. Cf. the discussion of the monopoly problem below.

[12] Cf. Clinton S. Golden and Harold J. Ruttenberg, *The Dynamics of Industrial Democracy*, pp. 263–291.

consciousness of its interests as a whole, and a policy by business to lower prices in appropriate circumstances. As both union and management (especially the latter) would be amenable to the pressure of public opinion, distortions in the allocation of resources might be kept within reasonable bounds.

As part of the program of promoting innovation, the workers must be educated to regard unions which restrict introduction of cost-reducing devices as renegades to the labor cause. They should be made to realize that part of their present housing difficulties, e. g., result from policies of the building trades unions, they should hold both unions and management accountable before the bar of public opinion, and they should urge the unions to seek other solutions for their problems. The main incentives for dealing with this problem, however, will be the self-interest of the union itself in seeking the fruits of technological gain together with abolition of the problem of heavy unemployment.[13]

The laboristic economy would enlist the government in the program for advancing technology. Patent reform is a moot point, but should at least be given serious consideration. More promising is a program of government-sponsored research with the results made available to everybody. It could be carried out both by establishment of government laboratories and by research grants to nonprofit institutions such as universities. In some cases such as big dam projects, it would be necessary for the government actually to carry out innovations and/or developmental projects; but in order to allow maximum room for initiative by the private sector of the economy, government should refrain from doing jobs which could equally well be done by someone else. Lastly, the government should reform the tax system to encourage private investment and technological advance.[14]

4. Any economy operated in labor's interest must place squarely upon the government the obligation to maintain full employment irrespective of the amount of government spending and deficits required. A socialist economy can achieve full employment directly. A laboristic economy must rely primarily upon fiscal and monetary policies. So much has been written upon this subject that only a few comments are needed here.

The 100 per cent reserve proposal, or for that matter the program based on it as recently formulated by Professor Milton Friedman,[15] is in keeping with the ideology but not essential to it. The only essential point is determination by the government to maintain a reasonably high level of employment (while keep-

[13] One of the principal reasons why unions restrict adoption of improvements is fear that some of the workers will lose their jobs. If the depression problem can be dealt with adequately, this motive should diminish in force. Cf. discussion of the depression problem in the next subsection.

[14] The tax-exemption now granted for certain classes of government securities should be eliminated to encourage investment in riskier undertakings. Greater concessions need to be made to new and small businesses by reducing the corporate income tax on amounts less than $50,000. The possibility of creating a fortune by investing undistributed profits needs not only to be preserved but reinforced by putting on the Treasury the burden of proving that the amount of profits retained is unreasonable.

[15] "A Monetary and Fiscal Framework for Economic Stability," *American Economic Review*, June 1948, pp. 245–264.

ing a substantial area of free competition), irrespective of particular devices for achieving this result.

From the standpoint of tactics, however, the 100 per cent reserve plan has much to commend it to labor leaders. Their political program needs at least one positive issue which will plainly differentiate it from the modified free enterprise which is the stock-in-trade of many modern politicians. The 100 per cent reserve plan has not for many years received serious consideration in Congress. It could count on strong opposition from Wall Street, thereby plainly drawing the issue between the masses and the financiers. What tradition of American politics is more honorable than voting against "the interests"? Moreover, it could be advocated as a curb against inflation as well as deflation; which aspect is emphasized could be adjusted to the current fears of the public.

Of the three famous fiscal paths to full employment—(1) a balanced budget with a large increase in government spending, (2) increased expenditures financed out of inflationary sources such as borrowing from banks, (3) decreased taxes accompanied by no increase in expenditures[16]—any one is prima facie compatible with the laboristic ideology. Which one (or rather which combination) is best depends on the volume of social and developmental projects desired relative to the area to be reserved for private enterprise, and it is possible that the size of the public debt might exercise some influence.[17]

Likewise it is a moot point whether the government should aim at stable prices or steadily rising prices.[18] Possibly the most workable solution would be a combination of the two in which everyone agrees that the ideal is full employment without inflation (so that the unions have good reason not to press for excessive wage increases) but in fact prices rise continuously at a rate varying perhaps from 0 to 5 per cent per year.

At the present time the ideal of full employment without inflation is impossible of achievement by the United States government. Aside from its refusal so far to commit itself unequivocally to the responsibility for maintaining full employment,[19] it is unprepared to deal vigorously and effectively with a deflation *at its*

[16] Cf. Appendix C (by Nicholas Kaldor) in William H. Beveridge, *Full Employment in a Free Society*.

[17] It should be clear by now that the problems created by a national debt which grows relative to national income are of a secondary order. The burden of repaying the debt is unimportant so long as the government pursues the sensible policy of repaying only when a surplus does not conflict with full employment. A properly adjusted tax system will prevent the rise of a class of drones living off interest from government bonds and will restrict excessive profits by the banking system. Everything else failing, the government can finance deficits by selling bonds to the Federal Reserve banks (which, despite the semiprivate status of the banks, amounts to selling the bonds to itself), or it can issue fiat money, or it can take over the banking system. The only substantial reason for concern over the size of the debt is the psychological repercussions on private investment—which, it seems to the writer, are usually overrated.

[18] Stable wage rates with falling prices are out of the question for reasons already given. Workers should receive a large part of the rise in productivity in the form of higher pay to provide the incentive for further progress.

[19] See Section 2 of the Employment Act of 1946.

inception.[20] Once the first few critical weeks are past, contraction gains a momentum which is difficult to stop. No doubt the disaster of 1929–33 will never be allowed to repeat itself, but it is by no means certain that contraction would be confined to a maximum of 10 per cent unemployed (i. e., 6 million), much less avoided altogether. On the other hand, the government's unpreparedness to deal with deflation quickly makes it impossible to take effective action against inflation. The postwar rise of prices could have been stopped by a sufficiently restrictive monetary policy, but could we seriously expect the Federal Reserve Board to shoulder the risk of precipitating a contraction of unknown dimensions until the government has demonstrated its ability and determination to confine deflations within narrow bounds?[21] And in any event the tendency of unions to push wages up faster than the rise of productivity makes full employment without inflation unattainable.

A monetary unit the purchasing power of which is expected to decline involves some troublesome problems. Social security payments must be fixed in terms of real values, not dollar values. Unless the same is done for bonds and life insurance policies, they would be difficult to sell. Accounting practices must be adjusted to allow adequate depreciation allowances and eliminate fictitious inventory profits. Such problems would take time to overcome, but they are not insuperable.

Whatever the policy decided upon, success will depend on educating the workers not to demand excessive wage rises. The greater the pressure from below on wages the more difficult it will be to maintain full employment. Fiscal policy is not enough: considerable flexibility is needed also.[22] In a capitalistic economy, such education is out of the question, but recent British experience indicates that once labor has political power the painful process of educating trade unions to their responsibilities for general stability can be effective.

5. The distinctive parts of the laboristic ideology have already been described. A number of minor topics remain which need little comment. A laboristic economy would, of course, favor progressive legislation extending the benefits of social security, providing low-cost housing, promoting public health, and insuring equal educational opportunities for all. It follows from what has already been said that price controls and rationing are disapproved except in time of war. There is no need for change in the present antimonopoly policy of the various governments. That is to say, where monopoly is not necessary in the public

[20] There will be lags between the inception of deflation and recognition of the fact by Congress; between recognition by Congress and passage of legislation; between passage of legislation and its effective date; and between the effective date and the transmittal of initial effects throughout the economy. The lags could be minimized if Congress had had more experience in dealing with deflation or granted the President discretionary powers.

[21] The Federal Reserve Board apparently has felt itself obligated to maintain low interest rates on government bonds since war's end to avoid increasing the government's interest burden and decreasing the value of banks' portfolios. Such considerations, however, need not be crucial if the board really wanted to stop inflation.

[22] Cf. Martin Bronfenbrenner, "The Dilemma of Liberal Economics," *Journal of Political Economy*, Aug. 1946, pp. 334–346.

interest, it is prosecuted under the antitrust laws;[23] where it is unavoidable, it is either regulated or socialized. Protective tariffs are undesirable for the usual reasons (though there is little ground for thinking the laborist economy will be more sensible on this subject than the capitalist). As for agriculture, a policy along the general lines of planning future levels of output and instituting price supports which tend to achieve the desired levels is quite in keeping with the foregoing ideology. Price supports would provide an automatic antideflationary device. Inheritance taxes would be considered desirable aside from any effects they might have in increasing the level of employment by raising the average propensity to consume; and they would be considered desirable in spite of any effects they might have in deterring investment and technological progress or in spurring inflation. For the laboristic economy will favor equality of economic opportunity and oppose the creation of a privileged, hereditary capitalist class.

6. The foregoing (or something like it) is the ideology which labor leaders may be expected to embrace. The rest of the community would want to know what must be done to prevent labor leaders from misusing the reasonable aspirations of labor to tyrannize the laboristic state. The answer falls into two parts. First, the government must ensure that outsiders can join unions on reasonable terms and that the members of unions have the opportunity[24] to run their unions democratically, to dismiss leaders whose policies they do not approve, and to defend their individual freedoms to criticize those in authority and to appeal judgments depriving them of union membership and jobs. This does not mean outlawing the closed shop. It does mean protection of the rights of individual workers in dealing with any union whether it has a closed shop or not. Second, the public needs protection from the consequences of strikes which jeopardize the public welfare. Enlightened labor leadership will endeavor to avoid precipitating further legislation similar to the Taft-Hartley Act.

As these restraints on labor are in the interests of the masses of the workers themselves, it should be possible to find the political support needed to put them into effect, particularly if they are imposed before society becomes completely laboristic.

II

Let us now summarize the foregoing ideology of the laboristic state:

1. Democratic political government.
2. Unionization of nearly all urban workers below the level of foreman, except professional workers and the self-employed.
3. Collective bargaining along present lines, with corporation management retaining substantially its present functions.

[23] It would be possible—and enthusiastic trust-busters might try—to push the policy of breaking up monopolies into competing units to absurd lengths, and particularly to the point of weakening technological competition (by technological competition I mean competition which takes the form of advancing technology as contrasted with competition within given production functions). But a half century of experience shows that the real danger lies in the opposite direction.

[24] The word "opportunity" is used advisedly. It is up to the members to keep unions free of racketeers and dictators. No one else can do it for them.

4. Political activity by the top strata of the CIO and AFL to elect labor's own candidates and reward its friends and punish its enemies.
5. Use of the above power along the following principal lines:
   (a) To promote technological progress through
      (1) Union-management cooperation
      (2) Government-directed research
      (3) A large area of free enterprise
      (4) Tax reform.
   (b) To achieve full employment without inflation through government fiscal and monetary policies.
6. Consciousness by labor that unions which raise wages unduly or restrict technological progress injure the working class as a whole; use of public opinion and indirect measures to control recalcitrant unions.
7. Restraints upon labor:
   (a) Protection of individual rights of workers who are or want to be members of a union;
   (b) Protection of public from strikes which jeopardize public health or safety.
8. Control of investment:
   (a) Encouragement of private investment as part of the promotion of technological advance;
   (b) Government investment where private initiative cannot do the job or where it is necessary to maintain full employment.

III

The above laboristic ideology will probably be criticized from two opposite points of view. Idealists will criticize it for making too many concessions to nonrational behavior by unions. Realists will criticize it for assuming that unions will behave more rationally than we have any right to expect. This article tries to strike a balance between the two. An ideology ought to set high standards in full knowledge that they cannot be completely attained. On the other hand, it cannot afford to ask for too much that is impossible lest it destroy its chances of acceptance. Criticism of the laboristic ideology should be directed at how well it balances the two objectives.

What are the chances, if any, that it will be adopted? To stand any chance at all, it would have to be perfected, restated, popularized, and brought forcibly to the attention of labor. Given that much, it could be a strong rival for the only practicable alternative, socialism. Its strength would derive from the strong attraction which free private enterprise still has for all classes of Americans. Socialism must labor under the stigma of foreign origins. The laboristic ideology is rooted solidly in American tradition. Its weakness stems from the late date at which it is proposed. Ten years ago, when the CIO was new, it might have had a chance to develop into official CIO doctrine. Now, however, the CIO has adopted a program which might be characterized as an attenuated guild socialism. The central proposal is to entrust output, price, and expansion decisions in each of the basic industries to a council composed of representatives of labor, manage-

ment, and government. By influencing the government, labor would expect to dominate council decisions. A National Production Board would review and adjust council projects. Consumers and farmers would be represented on the board, as well as labor, management, and government. The unanimity with which the CIO approved the scheme—not a vote was cast against it in the 1948 convention—may reflect not so much unanimity of sentiment as lack of interest in what for the moment is an academic issue; but it forbodes ill for any rival program.

The laboristic ideology is more in keeping with the outlook of the AFL than of the CIO. Federation leaders pay lip service to free enterprise at the same time that they approve government intervention in economic life. They might welcome a nonsocialist ideology. The question here is whether the AFL chiefs can provide vigorous political leadership to rival the CIO.

Most of the elements of the foregoing ideology are so widely accepted among economists that they might be called the modern orthodoxy. Nevertheless, it is neither to be expected nor desired that many economists will adopt the ideology itself. Aside from the conservatives and the socialists, to whom the ideology would not appeal in any case, many whose thinking runs along lines similar to the above will lack sympathy with the labor movement or with particular parts of the ideology. Nor is the wide diversity of opinion which always exists among economists to be regretted. The value of their work would be limited indeed if they all fell into agreement with one set of policies. But irrespective of personal opinions, economists not associated with the labor movement can contribute a great deal through constructive discussion of possible labor programs. Just as any program can be improved by technical criticism, so it can also be improved by comparison with alternatives such as this one. The present article is intended as a contribution in that direction.

This article is the kind which gets misinterpreted. Among other misinterpretations, the author inevitably will be branded a radical. Actually he is a conservative. The radical part of the ideology presented—namely, the rise of labor to political and economic dominance—is not what he advocates but what he foresees as the probable future development in this country. The ideology is an effort to conserve the traditional values of American economic life in the new environment. That is why he calls himself a conservative.

WAGES IN EXCESS OF MARGINAL REVENUE PRODUCT

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I

The principal purpose of this paper is the assembly and theoretical formulation of a number of cases where workers, organized formally or informally, can raise employee compensation in both short- and long-run well above their marginal revenue product to the employer without risk to the level of their employment. The list of cases will not be original. Many of these cited have been suggested by recent studies in labor economics[1]; further research may be expected to increase the total number.

In none of the instances to be treated here need reliance be placed on "frictions," "immobilities," or "ignorance," however important these may be in practice. Neither are kinks assumed in average product functions, to be reflected in discontinuities of the corresponding marginal products.[2] We do not discuss possible increases in physical productivity springing from higher living standards or improved worker morale. We do not discuss possible increases in marginal revenue product arising from decreased monopoly power of the employer in selling his product (or alternatively from increases in the product price).

We concern ourselves rather with special problems raised by "all-or-none" collective bargaining, by approaches thereto, by profit-sharing plans, and by labor participation in management. In many of these cases, wages can be raised above marginal revenue product by transfer into the pockets of labor of employer profits from "monopolistic exploitation"[3] of labor and other productive services.

[1] Particularly suggestive has been an essay by Nathan Belfer and Gordon Bloom, "Unionism and the Marginal Productivity Theory," in Richard A. Lester and Joseph Shister (eds.), *Insights into Labor Issues*, chap. 8, pp. 238–266.

[2] For an elaborate discussion of these discontinuities, see George Stigler, "Production and Distribution in the Short Run," *Journal of Political Economy*, June 1939, pp. 305–327, reprinted in American Economic Association, *Readings in the Theory of Income Distribution*, chap. 6, pp. 119–142.

Much of the evidence adduced by critics of "marginalism," notably by Professor Lester, involves little more than short-run discontinuities in marginal product functions, within which wages may be varied (i.e. by bargaining) without effects on employment. Cf. Richard A. Lester, "Shortcomings of Marginal Analysis for Wage-Employment Problems," *American Economic Review*, March 1946, pp. 63–82, and "Results and Implications of Some Recent Wage Studies," in Lester and Shister, *op cit.*, chap. 6, pp. 197–225.

[3] Acceptance of this term may brand the writer as hopelessly old-fashioned, in view of the strictures against it by Professor E. H. Chamberlin and Mr. Gordon Bloom, who require intent to exploit as of the essence of exploitation. The writer prefers to judge by results rather than intent—an ethico-legal difference too wide in import for settlement in economic footnotes!

Chamberlin's article, "Monopolistic Competition and the Productivity Theory of Distribution," has been reprinted as chapter 8 of the later editions of *The Theory of Monop-*

In others, the profits of "monopsonistic exploitation" of nonlabor resources may be taken over by labor within a competitive product market. In a third group, the incidence of the wage increase may fall on monopoly profits outside the employing industry, or upon economic rent. In a fourth, cooperant factors may be depressed to compensation levels below their own marginal products. In a fifth and final set, wages in excess of marginal revenue product are paid from windfall profits in competitive industry, whose expansion is thereby checked.

II

Perhaps the most important device used by organized labor to achieve these results is the "all-or-none" collective bargain in some overt or tacit form. "All-or-none" contracts result from bargaining processes in which the wage paid and the numbers to be employed are set in a single agreement. These bargains may be distinguished from price bargains, in which the size of the work force is left to employer discretion once the wage rate is agreed upon. When "all-or-none" bargains and contracts are introduced into the picture, a significant modification of received theory is required. This modification should prevent the uncritical acceptance of marginal productivity doctrines even in their expanded form (which takes account of imperfect competition),[4] much as imperfect competition itself should insure against uncritical acceptance of "supply and demand" in the explanation of price.

Not only in wage theory and labor economics, but also in other economic processes involving bilateral monopoly, much of our existing theory is imperfectly applicable. Nonlabor illustrations include "collective bargaining" between shippers and railroads regarding commodity freight rates, or between independent "planned economies" in international trade. Neoclassical economics portrays a process of maximizing incremental advantages at several margins; hence the names "incremental" or "marginal" economics. The corresponding transactions

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olistic Competition, pp. 177–190, and as chapter 7 of American Economic Association, *Readings*, *op. cit.*, pp. 143–157. Bloom's essay, "A Reconsideration of the Theory of Exploitation," has been reprinted in American Economic Association, *Readings*, *op. cit.*, pp. 245–277.

[4] The marginal productivity principle may be stated mathematically in two forms: Let a be a factor of production, and x the product; p_a and p_x are the respective prices. The elasticity of demand for the product of the single employer is η_x; the elasticity of supply of factor a to the same employer is e_a. The marginal physical product of a in producing x is x_a. In this terminology, we can derive, as a corollary of profit-maximizing by the employer:

$$p_a\left(\frac{e_a+1}{e_a}\right) = x_a p_x\left(\frac{\eta_x-1}{\eta_x}\right) \quad \text{or} \quad p_a = x_a p_x \frac{e_a(\eta_x-1)}{\eta_x(e_a+1)}$$

which is the principle in expanded form.

The simplified version ordinarily found in elementary textbooks assumes pure competition on both product and factor markets. Both η_x and e_a become infinite, and we have simply

$$p_a = X_a p_x$$

which has proved an easy target for institutional criticism.

in the real world, on the other hand, have come in increasing measure to include "all-or-none" bargains with much more inclusive content than the theoretical models. In "all-or-none" bargains, prices and quantities are determined simultaneously, with little or no room for incremental adjustments at margins. "All-or-none" bargaining may be carried out openly and undisguised, or it may pose as price bargaining within an institutional framework which effectively prevents quantitative adjustments or renders them highly expensive. (A variety of ways in which this may be done on labor markets are cited below.)

No elaborate mathematical apparatus is required to represent the all-or-none bargain and its effects. A union making such a bargain need pay little attention to marginal productivity considerations in setting either the wage or the quantum of employment. The only general restriction is that terms be sufficiently advantageous to tempt the employer to hire "all" rather than "none." (In certain abnormal short-run situations, even this may be unnecessary. For example, if the employer is forbidden legally to close his plant, or if state "full employment" policies require assumption by taxpayers of "fair" wages which private enterprise cannot or will not pay, "none" is not a meaningful alternative.) It will in practice be wiser union policy, at least in high-wage industries, to leave a margin for profit sufficient to avoid discouragement of new firms and contraction of plant capacity by firms already in operation.

Under what sorts of circumstances does a wage rate exist which is higher than marginal revenue product and which can be paid to a given work force without eventually forcing the employer out of business? In models where all industries are perfectly competitive and no economic rent is paid—to cite one case—no such wage would seem to exist. Here total product is exhausted as a condition of long-run equilibrium when each productive service (including the entrepreneurial) is paid its marginal revenue product, which equals the value of its marginal physical product.[5] Wages in excess of this amount lead to losses, and eventually drive the employer out of business.[6] This is a "goose and golden egg" problem. What types of situations eliminate it?

Study, discussion, and observation have suggested some half-dozen such types. They are listed and discussed briefly in the paragraphs immediately below. Additional types may be proposed by others. It is assumed throughout that the union is strong enough to have eliminated previously any direct monopsonistic exploitation of its members.

[5] Demonstration of this result goes back to Wicksteed and the Lausanne School, whose particular proofs are not regarded today as generally valid. Cf. Henry Schultz, "Marginal Productivity and the General Pricing Process," *Journal of Political Economy*, Oct. 1929, pp. 505–551; J. R. Hicks, *Theory of Wages*, appendix i: Mrs. Joan Robinson, "Euler's Theorem and the Problem of Distribution," *Economic Journal*, June 1934, pp. 398–414; George Stigler, *Production and Distribution Theories: The Formative Period*, chap. 12, pp. 320–387.

[6] If a wage increase reduces the return to implicit or entrepreneurial factors (even temporarily, pending entrepreneurial withdrawal from business) below their marginal productivity, we would have in fact "exploitation of employers" by labor, quite as suggested by Belfer and Bloom, *op. cit.*, p. 240.

1. Perhaps the most obvious and clear-cut type of imperfection which permits of wages exceeding marginal revenue product involves monopolistic exploitation not only of labor but of other factors as well. Here marginal revenue product falls short of the value of marginal physical product; a surplus is left, which may constitute monopoly profit. Under these circumstances, an all-or-none bargain may achieve for an aggressive union on a permanent basis a share in these monopoly profits, whether obtained by a monopolistic employer or by a trade association in the employer's industry. All-or-none bargaining gives the lie to the plausible denial of the adequacy of labor organization as a defense against monopolistic exploitation. (The denial, that is to say, is plausible if we assume price bargaining exclusively.)

2. Allied to monopolistic exploitation are widespread windfall profits in competitive industry, such as follow the introduction of an innovation and characterize the prosperity phase of an inflationary boom or cyclical process. Forced payment of wages above marginal revenue product, which equals the value of marginal physical product under pure competition, operates in this case to forestall the potential expansion of output and employment that would otherwise have been anticipated, but it does not actually decrease output or employment unless carried too far. This case is significant particularly in that it illustrates the possibility of permanent gains by labor through all-or-none bargaining in purely competitive industry.

3. The employer may be a monopsonistic buyer of some nonlabor factor of production—as is a large meat packer on a livestock market, or a large cigarette company in buying tobacco. He may make substantial monopsony profits through exploiting this position. These monopsony profits can be tapped by organized labor through all-or-none bargaining, with a wage set above marginal revenue product without fear of contraction. In this case, it should be noted, the gains of organized labor are obtained indirectly at the expense of the factor monopsonistically exploited. Livestock raisers (or tobacco farmers, in our hypothetical illustrations) are then subject to monopsonistic exploitation for the indirect benefit of packing-house or tobacco workers as well as the direct benefit of meat packers or cigarette companies. Organized labor is then in the position of indirectly exploiting other factors of production. The amount of exploitation need not be affected by all-or-none bargaining. There is no evidence that livestock raisers or tobacco growers are either better or worse off under monopsonistic exploitation for the indirect benefit of organized labor than under the same sort of exploitation for the direct benefit of the employer.

4. Allied to the monopsony cases are others involving public or private rationing or allocation of nonlabor factors, such as bank credit, steel, or the like. If the employer earns 10 per cent at the margin on capital borrowed at 6 per cent, but is refused additional credit at any interest rate, an increment of 4 per cent at the margin is available for tapping by organized labor on an all-or-none contract, precisely as though it had resulted from monopsonistic exploitation of capital.

5. The employer (or his industry) may pay an economic rent to some nonlabor factor specialized to the firm or industry, and available to it only in fixed supply (zero elasticity). An increase in wages, combined with an all-or-none contract,

can force the employer to substitute labor for the specialized factor, even against the dictates of maximum profit.[7] It might be more remunerative for the employer to substitute in the opposite direction in consequence of the wage increase, but the all-or-none bargain effectively prevents such substitution. Being required to hire "excess" labor, the employer puts it to the best use he can, substituting it for other resources whenever possible and permitted. When labor is substituted for the specialized resource, the demand for the latter would decline.[8] Under our hypothesis of inelastic supply, the rent of the specialized resource would fall sharply, until the incidence of the wage increase would fall completely upon rent.

6. An allied case involves exploitation of the employing industry as purchasers of some nonlabor factor of production specialized to this industry and produced under monopolistic conditions. The effect of a wage increase combined with all-or-none provisions may then be similar qualitatively to the effect discussed in the preceding paragraph. The wage increase, like a tax, could be shifted partially backward to the monopolized factor. Labor would be substituted for the monopolized factor rather than being paid in idleness. The demand for the monopolized factor would fall. Both its output and price would follow, and the cost of the all-or-none bargain would be paid in part from the monopoly gains of the resource-producing industry. The shift would not in general be complete (as distinguished from the preceding case) unless marginal cost in the resource-producing industry were highly inelastic, as under conditions of production at physical capacity.

III

Forthright all-or-none contracts, which fix simultaneously wage rates and job numbers, are relatively rare in current American labor relations practice. Both in America and elsewhere, however, provisions of equivalent import are finding their way into collective agreements between employers and employees. Other such provisions may be imposed by law, by custom, or by illegal means. Certain of these equivalents or approximations are considered in this section: annual wage contracts, dismissal wage provisions, and restrictive working rules. Once again, the list does not profess exhaustiveness.

1. The "annual wage" is interpreted by many writers, including notably Professor Wassily Leontief and his followers,[9] as differing in name only from the all-

[7] By requiring the maintenance of employment, the union would doubtless prefer to force an increase in output, hence in the demand for nonlabor factors as well. In a competitive industry, however, increasing labor cost is hardly an approved method for inducing increased production. Individual firms may be cajoled or coerced into expansion, but the decline of the industry as a whole can be prevented only by the intervention of economic growth or by offsetting reduction of other cost factors.

[8] How can this decline in demand for the specialized factor be reconciled with its unchanging physical productivity? The reconciliation appears to take the following form: Use of the specialized resource (beyond a certain point) would involve the employer in wage payments to workers who would produce nothing. The *net* marginal value product of the specialized resource would then fall, after deduction of these wage payments as additional costs.

[9] W. W. Leontief, "The Pure Theory of the Guaranteed Annual Wage Contract," *Journal of Political Economy*, Feb. 1946, pp. 76–79. Belfer and Bloom, *op. cit.*, pp. 254–256, are in agreement.

or-none contract. Such conclusions are certainly justified insofar as the four following provisions are to be found in particular agreements:

a. The contract states with some precision the number of employees covered by the annual wage guarantee.

b. This number includes substantially the employer's entire working force.

c. The wage guaranteed approximates that which would be earned under continuous full employment.

d. Annual wage guarantees cover periods longer than a single year, or are renewed periodically as a matter of course.

Many existing annual wage contracts fall well short of these marks in one or more respects. Many of them leave the employer wide discretion as to the number of workers he should retain at the outset of the year. Others apply only to an inner core of senior workers, largely immune against dismissal in any event. In others, the wage guaranteed is only a small fraction of the wage earned under full employment. Most plans are subject to annual renewal, so as to restrict for only limited periods the employer's right to reduce his work force. It is either a forecast or an exaggeration to characterize all such plans as all-or-none contracts. However, a really satisfactory "annual wage" contract from a union viewpoint would certainly justify Leontief's conclusions.

2. Provisions for "dismissal wages" or "severance pay" operate unequivocally to penalize employers economically for reductions in their work force.[10] Their effect is therefore to induce retention of employees for prolonged periods when their productivity drops below their wages. They do not, however, require the employment of such workers in the first instance.

In extreme cases, noneconomic as well as economic penalties may be called into play. Legislation forbidding dismissals except for cause or with government approval was enacted under the Nazi regime in Germany in 1933. Here criminal penalties (imprisonment) replaced the economic in checking any operation of marginalist economics. The German code in fact exceeded the all-or-none contract in its severity. It forbade employers to retire from business without official permission, thus removing largely the alternative of "none."

Japanese experience provides a variant on the same theme. The quasi-feudal obligations of employers toward employees induce them in their capacity of "lords of the factory" to continue payment of employees whether or not there is work for them—indeed, even when they are striking for wage increases.[11] The gruesome Shimoyama murder (Summer 1949) followed immediately upon the dismissal of several thousand excess workers by Mr. Shimoyama, President of the National Railways Corporation of Japan. Shimoyama's fate illustrates the consequences of violating Japan's unwritten labor code.

Labor racketeering may also be mentioned in this connection. One of its forms is the forced padding of payrolls with "workers" who may never appear, or whose

[10] Compare Belfer and Bloom, *op cit.*, p. 251, on the subject of dismissal wages.

[11] For this information I am indebted to Professor Shichiro Matsui of Doshisha University, Kyoto, currently (1948–49) studying and lecturing in the United States under the auspices of the Institute for International Education.

"marginal productivity" may be zero (or even negative). Another is a compulsory though informal all-or-none contract for bona fide workers at exorbitant wages (which include a "kick-back" to the racketeer). Here criminal coercion overcomes marginal productivity. Economic, common, and statute law are violated simultaneously. Although labor racketeering is prevalent in a number of American trades, we may turn to China for a particularly flagrant and large-scale contravention of productivity economics. In the disturbed conditions of 1945–48, cotton mills were forced to continue meeting payrolls with no raw cotton on hand and with workers completely useless, by employee threats to wreck the plants unless wage payments were continued as usual.

3. Working rules of various sorts, introduced into labor relations either by formal contracts or by traditional practices, effectively raise wages above marginal revenue product by applying all-or-none methods a bit at a time, to particular segments of a firm's operations.

Working rules may fix the proportion of workers to product, as those of the Musicians which require a certain number of union members be hired in connection with radio broadcasts of phonograph records.[12] More commonly, the ratio required is one of union workers to other factors (usually fixed capital of some sort). The "full-crew" regulations of the Railway Brotherhoods fall into this category. In the first instance, the all-or-none nature of the restriction is obvious, and a strike is threatened if the "none" alternative is chosen. In the second instance, the device may be equally effective if the use of the capital instrument is necessary (as are locomotives to the railroads and presses to the printing trades).

Economists by and large have lagged in adjusting marginal analysis to the existence of rules like these. If the ratio of labor to product or to capital is fixed by law, agreement, or custom, it clearly becomes impossible to vary individual factors in the manner supposed by conventional theory. In technical parlance, factors of production cease to be "compensatory" or "substitutional" even in the long run, and assume a "limitational" character. Their returns cannot be explained by marginal productivity reasoning alone; recourse must be had as well to the concept of rent in the generalized form developed by Vilfredo Pareto at the turn of the century.[13]

(An alternative interpretation: "compensatory" factors of production, between which substitution is possible, are redefined by working rules as hybrids or composites, within which returns to components depend largely on bargaining strength.)

When associated with such phenomena as working rules, the distinction be-

[12] Belfer and Bloom, *op. cit.*, p. 249 f., interpret the activities of the Musicians in the same manner.

[13] For the distinctions between "compensatory" and "limitational" factors see Henry Schultz, *op. cit.*, pp. 508–529, 545–551; J. R. Hicks, "Marginal Productivity and the Principle of Variation," *Economica*, Feb. 1932, pp. 79–88; Henry Schultz and J. R. Hicks "Marginal Productivity and the Lausanne School," *ibid.*, Nov. 1932, pp. 285–300; N. Georgescu-Roegen, "Fixed Coefficients of Production and the Marginal Productivity Theory," *Review of Economic Studies*, Autumn 1935, pp. 40–49, together with the references to Pareto's *Cours* and *Manuel* there cited.

tween "compensatory" and "limitational" productive services assumes a social significance which it lacks otherwise. It will not do any longer to consider all factors compensatory, even in the long run, as is suggested by Professor Stigler.[14] Discussion of limitational factors has run almost entirely in terms of possible technical requirements of production processes, and on this level Stigler is probably correct. The problem takes on new and broader economic meaning when studied in the light of rules which render factors limitational by artificial means, without regard to the technical possibilities of substitution.

IV

Aside from all-or-none contracts and approaches thereto, at least two other sets of devices may raise employee compensation well above its contribution to employer net revenues at any margin of employment. The first of these devices is profit-sharing. The second is direct labor participation in industrial management.

There is a wide variety of profit-sharing plans in American industry, differing among themselves in many respects. All, however, purport to divide among workers, over and above wages which presumably do not exceed their marginal revenue product, a certain sum related to the employer's book profits. No offsetting deduction is included for the coverage of book losses. In competitive industry, the bonus or supplement is uncertain and unreliable except in periods of boom. In monopolistic industry, however, it may become an expected feature of industrial operation and enlist labor support for the preservation of the employer's monopoly power and position.

It is immediately obvious that wage-plus-bonus may exceed marginal revenue productivity if the plan is a generous one. (It need not do so if the plan is niggardly and the employer possesses significant monopsony power.) Assuming a generous management—or at least a management which esteems its employees as highly as its stockholders—wage-plus-bonus may exceed marginal revenue product quite substantially in boom years under competitive conditions. The same may be true more systematically in monopoloid industries (including industries practicing monopsonistic exploitation on factors other than labor).

Having made this point, there seems little more to add, inasmuch as organized workers resort but rarely to the profit-sharing device in their efforts to raise compensations above marginal revenue product. The device makes its appearance more frequently as a management gesture, sometimes even as an anti-union move. Workingmen, or at least their more outspoken leaders, distrust the uncertainties involved, as well as the somewhat periodic nature of most bonus payments. They distrust employer bookkeeping as well, and frequently feel themselves getting somewhat less than they have been promised or could obtain by greater militancy. Left-wingers in their ranks fear the "class-collaboration" entailed by profit-sharing, and the more enlightened economically disapprove the entangling alliances with monopoly required for steadiness and certainty in bonus payments.

[14] George Stigler, *Production and Distribution Theories*, *op. cit.*, pp. 367 f., 380.

V

Much more important than profit-sharing as a union device are various proposals for increased labor and union participation in the traditional prerogatives of management. The most important of such prerogatives, for our present purposes, include decisions as to the size of the work force, the scale of operations, and the nature and prices of the firm's products.[15]

The sociological and political implications of union demands for participation in management have been stressed by labor economists, personnel specialists, industrial psychologists, and allied experts, somewhat at the expense of the earthy economic ones. Participation in management elevates the worker from his previous status of "second-class citizen" within the employer's plant. It shifts industrial life toward a political democracy, and away from an army camp. It gives the worker a voice in the framing of policies which he considers more significant to him than most matters dealt with in aldermanic chambers, state legislatures, or the United States Congress. And so it goes.

One need not dispute these points, or their paramount importance in labor relations, to consider in addition the direct economic consequences of employee participation upon, for example, the firm's level of output and employment. The effect is comparable with that of the all-or-none bargain. Any upper limit set by marginal revenue productivity is lifted completely and permanently. It is questionable what (if any) other roof is substituted, short of the complete starvation of nonlabor factors,[16] once the practice becomes general.

As Professor Reder has pointed out most recently,[17] marginal productivity analysis depends quite strictly upon profit maximization. It requires profit maximization *both* in the sale of products *and* in the hire of factors. (Maximization on factor markets alone leads to *proportionality* between marginal revenue product and marginal factor cost for all productive services. Maximization on the product market as well supplies a unit factor of proportionality, and transforms the relationship from a proportional to an absolute form.)

When labor representatives share its prerogatives, management ceases to be a matter of maximizing simple money profits over any period whatever, regardless of its previous status. The change tends to be concentrated in its dealings with productive services, labor above all. When management no longer aims at maximum profit in its dealings with labor, marginal productivity analysis applies on the labor market neither in its absolute nor in its relative form. There is a systematic departure from profit maximizing, and definitely in the interest of labor. The formal "entity" to be maximized under these conditions is not profits alone but some increasing function of profits, wages, employment and industrial peace. It is therefore to be expected that wage rates, employment, or both will be

[15] For fuller discussion of many of these issues, see Neil W. Chamberlain, *The Union Challenge to Management Control*, chaps. 4–5 esp. pp. 82–100. An unpublished doctoral dissertation by F. F. Suagee (Univ. of Wisconsin, 1948) covers much of the same material, stressing the long-standing historical background of the problem.

[16] Compare Maurice Dobb, *Wages*, p. 150 f.

[17] M. W. Reder, "A Reconsideration of the Marginal Productivity Theory," *Journal of Political Economy*, Oct. 1947, pp. 450–458.

greater than they would have been with profits maximized exclusively without regard to wages and employment. In any systematic departure from profit maximizing—higher wages, higher employment, or a combination of the two—we may expect wages exceeding the marginal revenue product of whatever quantity of labor may be employed.

If labor representatives also have a voice in determining production policy, output may sometimes be increased (to provide greater employment) and product price lowered (to assure its sale), as compared with the profit-maximizing case. Labor participation may have the same effect as antimonopoly legislation in counteracting monopoly power and increasing output to the competitive optimum or even beyond. (Persistence conditions for these output effects, it may be noted, are somewhat more restrictive than those listed above for persistence of

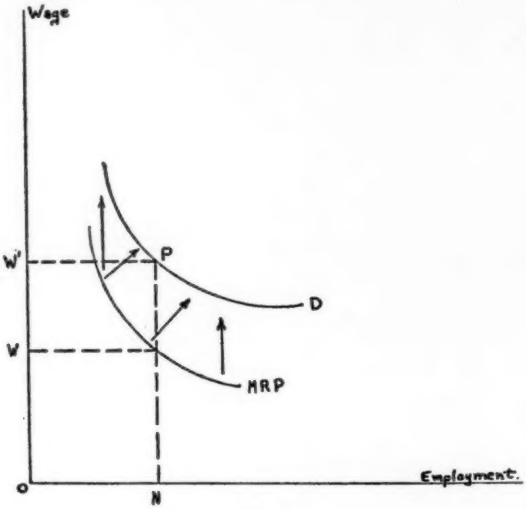

Fig. I

wages in excess of marginal revenue product. In particular, reliance cannot be placed on the operation of Paretian rent, which affects distribution but not output.)

VI

A single simple diagram will serve as a focus for much of the argument of this paper. Its axes are conventional. The horizontal measures labor in man-months or man-years. The vertical, in the money dimension, measures cost and productivity. The marginal revenue product function is labeled MRP. It slopes downward. According to conventional theory, it represents the employer's demand curve for labor. If N men are to be employed by this firm, the employee compensation per period is W.

Wages may, however, rise above the marginal productivity level W to a higher level W′ by any of three methods:

1. If there is all-or-none bargaining, the employer must choose between points O and P. P lies above MRP, but if it is in fact preferable to complete shut-down at O, the N men will be employed at wage W′. The employer's demand curve for labor remains at MRP, but becomes irrelevant in the face of the all-or-none tactics of the union.

2. If there is profit-sharing, the entire demand for labor is moved *upward* (vertical arrow) from MRP to D, by the amount of the bonus payment, which we suppose to vary with employment and output. For N men, the total employee compensation (wage plus bonus) is again W′.

3. If there is employee participation in management, the demand curve for labor is again shifted from MRP. We presume the shift to the same curve D as in case 2, purely for the sake of simplicity. The shift this time, however, is a complex one, involving both increases in wage rates for given employment and in employment for given wage rates. It is denoted on the diagram by diagonal arrows. The formal results are the same as in the preceding case, but the rationale is different, as is shown by the different slope of the arrows.

VII

We have indicated the power of organized labor to raise wages above any limits set by marginal revenue productivity, without threat to its employment. We have also cited several conditions under which the divergence can persist as a characteristic of long-run equilibrium, and not simply as a disequilibrium or frictional matter. In general, these conditions involve the sharing of the employer's monopoly (or monopsony) profits or the exploitation of other productive services (including possibly the employer himself). The last-named result requires the artificial creation of compound factors of production, within which labor is a limitational factor and the bargaining theory holds sway.

To show the possibility of an occurrence is one thing. To show its conceivable persistence is a second. To show its economic or social desirability is a third, and quite a different matter. In developing the possibility of wage payments in excess of marginal revenue product, we have not assumed their desirability along the familiar line of "Labor Can Do No Wrong." Rather we have left the issue in abeyance until this final section, which is in the nature of a postscript.

Equality between factor prices and the (social) value of their marginal physical productivities is one of the received necessary conditions for a welfare optimum in the allocation of scarce resources.[18] Increases in labor remuneration within the differential between its (private) marginal revenue product and the (social) value of the marginal product would seem all to the good, further increases all to the bad.

But this is an arrant oversimplification, even ignoring differences between private and social productivities. For one thing, distributional effects should not be ignored in an imperfectly competitive society. In such a society, wage payments

[18] A. C. Pigou, *The Economics of Welfare*, p. 549; A. P. Lerner, *The Economics of Control*, pp. 96–99; M. W. Reder, *Studies in the Theory of Welfare Economics*, p. 32 f.

in excess of marginal revenue product (and value of marginal product as well) reapportion to some extent the gains of monopoly, monopsony, and-or economic rent in a fashion conforming more closely with equalitarian sympathies than do their most obvious alternative. If they are achieved through labor participation in management, such payments may also go hand in hand with increased output and lower prices in industries not purely competitive.

The complications of the last paragraph have been generally favorable to wage increases in excess of marginal revenue product. Other complications intrude on the negative side, as well as upon the clear picture presented by oversimplified welfare economics. Thus wage setting above marginal revenue product will usually lead, in purely or monopolistically competitive industries with large numbers of employers, to withdrawal of firms, reduction of outputs, and increases in product prices. It may induce reduction of investment, lower interest rates, and a delusion of "economic stagnation." In monopolistic and monopsonistic industries, it can provide workers a tangible and substantial stake in the maintenance of their employer's monopoly power against either economic or legal pressures.

To what welfare or policy conclusions, then, is it possible to arrive? At very few, unfortunately, of a blanket character. (Welfare economics has not differed so greatly from other branches of economics in its fruit-light ratio as Professor Pigou anticipated in 1912.) Our welfare and policy conclusions depend in part upon the incidence of the wage increases, and in part upon the nature of the industry under consideration. To make matters worse, the two criteria are interrelated.

When we are dealing with a competitive industry, where marginal revenue product and the value of the marginal physical product are equal, it may seem a safe generalization on welfare grounds to disapprove a wage rate in excess of marginal revenue productivity. Even here, however, exceptions should be made to to allow for the possibility of its incidence falling upon economic rent or upon the monopoly profits of some other industry.

When we are dealing with a monopolistic industry, the incidence and effects of a wage in excess of marginal revenue productivity require more detailed examination. The conclusions which follow are offered as tentative, preliminary, and (perhaps inevitably) subjective:

If the incidence of the higher wages is upon economic rent or upon the monopoly profit of another industry, it may be regarded as desirable on equalitarian grounds as in the competitive case. One might, however, prefer to see the rent or profits reduced in other ways.

If the incidence of the higher wages is upon monopoly or monopsony profits in the employing firm or industry, considerations of equality suggest favorable conclusions, although again other means to accomplish the same end may be preferable. When output and employment are increased concurrently with wages, the favorable impression is strengthened. When, on the other hand, the effect is provision of mass support for monopolistic practices, the favorable impression is weakened, perhaps to the point of reversal. Equality is obtainable through fiscal processes. It should not be used as a bribe in bolstering the monopoly power of "good" employers over the consuming public.

If the incidence of the higher wages falls upon consumers in lower output and higher prices, there is a presumption of undesirability on welfare grounds. This may occasionally be mitigated by equality considerations if the commodity produced is a genuine luxury, but hardly otherwise. Organized labor, particularly in skilled categories, is no longer a pauper class vis-a-vis consumers in general in the American economy.

If the incidence of the higher wages falls upon another productive service through the erection of artificial indivisibilities and the operation of Paretian rent, an unfavorable presumption holds once more, this time on strict welfare grounds. The other factor is being underemployed or forced into less productive employment in favor of organized labor. In either event, it is being wasted economically in whole or in part. If this other factor happens to be unorganized or weakly-organized labor, the effects on equality may be undesirable as well. If the other factor is capital or entrepreneurship, these secondary effects are less probable, but there may be depressing repercussions on total investment and economic progress throughout the economy if this pattern of incidence becomes widespread.

A final paragraph, a postscript to a postscript: Whether wages are above or below "marginal productivity" in any of its several senses, the incidence of their changes should receive in economic discussion more attention than they generally do. Whether there be rents, windfall profits, or monopoly gains out of which wages *can* be increased is only part of the point, perhaps the less important part. The question raised should be a broader one, in at least two respects. (1) *Will* increases be paid in fact in this manner? (2) Does not policy suggest the reduction or elimination of such rents or profits in the public interest, rather than their cultivation as pools for increasing the wages of strategic groups of organized workers? Is not another of the welfare conditions equality of price with marginal cost?

INTERNATIONAL MONETARY RELATIONS

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Specialization of economic activity is possible only if the products of that specialization are exchangeable. Since production which uses division of labor—whether among individuals, firms, or regions—is superior to production which precludes this specialization and because the exchange of goods and services is an essential condition for such division of labor, it follows that trade is a necessary prerequisite to economic progress and expanding economic welfare.

International trade is mainly an extension of the trading area across national (politically sovereign) boundaries and is no exception to the aforementioned generalization. In fact, international trade affords some of the best instances in which specialized production and exchange contribute most obviously to all parties to the trade. The principle of the gains from trade has been widely accepted since the days of Adam Smith.

It follows, therefore, that it is desirable to create an environment free from restriction on the full play of economic specialization. Since trade is a prerequisite to specialization, it is implicit that the international framework should be free from those factors which inhibit trade or channelize it along lines it would not take in the absence of these restrictions.

One of the more important barriers to trade between nations in recent years is the absence of a very essential link in the chain of international trade, namely, the absence of a generally acceptable means of payment with which international commitments could be settled. This state of affairs arose more as a sin of ommission than commission. As long as a stable means of settling international balances does not exist, international trade entails an extra risk not present in domestic trade, viz., that associated with the conversion of the currency paid by a foreign purchaser into the currency useful to the seller.

The risk entailed in conversions between national currencies poses an even greater impediment to international investment. Just as it is desirable to export goods which are cheap and abundant in a particular country, so too it is desirable to export capital from a region where it is cheap and abundant to a region in which it is scarce and dear. The export of capital is an important aspect of world trade. Since currency fluctuations entail the risk of payment of interest and/or repayment of principal in a depreciated currency, the creditor is faced with the prospect of a substantial loss on any transaction. The absence of a universal medium of payment, or what is in effect a perfect substitute for such a medium—a fixed and stable relation between autonomous currencies—represents an invisible, but nevertheless important, barrier to the development of world trade. Any attempt to foster an increasing volume of world trade requires a unified program designed to provide economic and political stability throughout the globe. This paper is concerned with the monetary factor in international trade and is only

one phase of the broader requirements for a program designed to reconstruct world trade.

Prior to the outbreak of World War I, the international gold standard provided stable exchange rates between various national currencies. It does not appear that this monetary standard was planned for that purpose, but rather that stable exchange rates developed out of the evolving monetary system. The gold standard worked surprisingly well and there was little ground to deny the validity of the general body of doctrine explaining its operations. It was therefore accepted by the economic world, with few notable exceptions, as a fairly self-contained body of thought. Yet, in 1914, the gold standard as a smoothly working process disappeared from history, perhaps never to return. It was generally held after World War I that all we had to do was to restore this monetary standard and it would operate as before. However, attempts at restoration in the twenties failed.

It is impossible in the brief space permitted to summarize all the events which transpired to upset the financial world after 1918.[1] However, it is from the history of this epoch—from the blunders that were made—that the idea began to evolve that the world badly needed to develop a system whereby international payments could be made and international trade carried on. It is necessary to run through briefly the highlights of the years between 1918–1938, dividing them not so much into chronological periods as into mistakes from which lessons could be learned on which to base the post War II international monetary system.

Each of the periods is an illustration of how the forces of disequilibrium are likely to upset, and if they are strong enough, to ruin entirely, any system of international monetary settlement. Together they give us a fairly complete picture of the kind of system needed to cope with the disequilibrating forces of the magnitude foreseeable in the near future.

The lesson of the first period, lasting roughly from 1918–1922, is that the reconstruction needs of a war-torn continent should not be supplied by a speculative inflow of capital. The monetary units of those nations which had suffered most from the war and had therefore experienced the greatest degree of inflation, as well as those nations which were required to pay large sums in reparations, depreciated relative to nations like the United States, whose financial system had not been seriously affected. Private capital (mainly from the United States and Great Britain) expecting that the "depreciated" currencies would appreciate to "normal" levels with the return of more "normal" conditions, took advantage of the low dollar and sterling prices prevailing and speculatively purchased securities and property in Europe. This inflow of foreign money served to support the falling European currencies. However, the forces of depreciation (mainly the shortage of goods and the recurring budgetary deficits) were too powerful to be stopped. As currencies continued to depreciate, it soon became apparent that the hoped for restoration of "normality" was indeed remote. As foreign investors sought to rectify their errors, there ensued a rush to liquidate investments in for-

[1] In preparing this material the League of Nations, *International Currency Experience: Lessons of the Inter-War Period*, (1944) was extensively used.

eign countries, which only served to aggravate the currency depreciation. Continued attempts by the European monetary authorities to correct the disequilibrium by further depreciation merely served to magnify the disequilibrium, because to the reaction of foreign capital was added the exodus of domestic capital, which put further pressure on the foreign exchange position of the currency. Stabilization of the currency became imperative. Attempts at achieving equilibrium through a freely fluctuating foreign exchange rate in later years led to similar perverse movements of speculative capital. Another lesson to come from these years was that speculative capital movements are very disruptive of the structure of foreign exchange rates and should be subject to stringent control.

The second period, lasting from 1922 through 1928, was highlighted by attempts to stabilize the currencies of the world. Each nation unilaterally and with no attempts to consult its neighbors relative to whom it wished to stabilize began to fix the par value of its currency in terms of gold. The abnormal movements of capital which were taking place, the fact that each nation had since 1913 undergone serious structural change, and the more obvious fact that each country was experiencing widely differing degrees of inflation appeared to be completely disregarded. England in 1925 refixed the value of the pound at 77 shillings $10\frac{1}{2}$ pence to an ounce of gold because this happened to be the gold value of the pound sterling in 1913. France refixed the value of the franc at considerably less than its prewar value in gold. In the light of the prevailing price levels in England and France, the franc was undervalued relative to the £: France therefore became a cheaper market in which to buy than England. These and a host of similar unilateral actions with regard to currency par values placed a series of burdens on the already upset structure of international payments. The restoration of currency to artificial par values could be rectified only by changes in all national price levels violent enough to bring the relative par values in line with each other. Such changes were difficult if not impossible to achieve. In England, for example, the forces unleashed to lower the general price level (and with it the level of wages) succeeded only in fomenting the General Strike of 1926. One lesson garnered from the experience in this period is that the par value of currencies should be fixed in accordance with the existing general price levels, and not the other way round, as was attempted in the years 1922–1928. Since par values of currencies are always relative to the par values of other currencies, it can be inferred from the experiences of the middle twenties that nations should meet and fix the respective par values of their currencies on a consultative basis.

Another lesson followed from the above both in logic and in history. If the par values of currencies even after consultative fixing are not in line or if, after they have been in line for a while, changes take place within an important trading area which affects its purchases from abroad, it is inevitable that forces will be released which will tend to restore equilibrium in the balance of payments. Because of the rigidities of the price and wage levels which exist in the modern economic world, the required decline in the general price level may not be forthcoming. However, if the price level does not fall, a decline in employment will ensue, which has much the same result as a falling price level. National income

declines, resulting in reduced national buying power, which leads to a reduction in imports until the imbalance in the nation's international accounts is corrected. From 1925–1929, while the rest of the world was enjoying a period of prosperity, England was suffering continuous unemployment of over a million of her work force. This situation plagued England because the pound was overvalued, thereby upsetting her balance of payments, and her price level did not fall.

It appears that a decline in employment in the absence of price flexibility was a contingency which earlier theory had not seriously considered. This oversight, if such it was, is understandable in the light of the assumed perfectly fluid price levels in which unemployment (except temporary) would not exist. In the face of the dynamic rapid growth of world trade prior to 1913, history did not appear to contradict the assumptions. While depressions had occurred, they were soon carried into a new wave of prosperity by the rising secular trend of growth. In 1930, however, a depression struck the world with greater severity than ever before. Starting in the United States, it was associated with a decline in national income which led to an almost automatic curtailment in purchases from abroad. The nations which sold to the United States felt the effects of curtailed export sales through a decline in their national income and reacted by curtailing purchases at home and abroad.

Had these countries not curtailed foreign purchases they would have experienced an outflow of gold to the United States and a contraction of their own domestic currency circulation. The outflow of gold would have led by the rules of the gold standard game to a rising rate of interest and a declining velocity of money, both of which would have caused a fall in the level of economic activity. In view of wage rigidities the decline in business activity would be characterized by an increase in unemployment.

The gold standard was a difficult task master which required that the domestic economy, if necessary, had to suffer so long as external par values remained out of line. During a period of prosperity, this was lauded as the great achievement of the gold standard. Whenever depression set in, the requirements of the gold standard amounted to an unfailing means of ensuring that each nation was as depressed as every other. Because the government of each nation felt that it knew better than its neighbors how to achieve and maintain a continuous state of prosperity in the domestic sphere, an almost universal desire to sever the domestic monetary system from the outside world swept the globe. A fourth lesson of the interwar period was that it is desirable to prevent money flows arising from external exchange transactions from having any depressive effect on the volume of domestic circulation or the domestic rate of interest.

The first and most obvious answer to the question of how can a nation achieve independence of its domestic circulation is to permit the foreign exchange rate to fluctuate freely. By pursuing such a course of action, the nation can obtain a balance between foreign payments and receipts without upsetting domestic prices, employment, and income. The world had seen earlier that free exchange rates are impossible without a strict control over short-term capital flows; these capital flows were controlled. Despite this precaution, such attempts as were

made to have a system of free exchange always ended in failure. The uncertainty introduced by fluctuating exchange rates, together with the narrow profit margins, made it difficult to conduct international trade. Nor was it feasible to introduce a system of forward buying and selling in order to cover the risks resulting from fluctuating exchange rates as the premiums payable to cover the risks of the insuring agency itself would have to be prohibitively high. Furthermore, the continuous changes in the structure of trade caused by fluctuating exchange rates—changes which could overnight cut off a whole foreign market or create a new one—introduced strains which even the most flexible of production frameworks was unwilling to undergo. From this experience was drawn the fifth lesson, namely that freely fluctuating exchange rates reduce the volume of international trade and should be avoided.

An alternative method of achieving a balanced foreign account without interfering with the domestic economy was the employment of exchange controls. Invariably it was a state of unbalance leading to gold drains which constituted the source of anxiety to the gold-losing nation. Exchange control was presumably the method to prevent this drain. Control could never eradicate the causes of the drain, one of which is usually the overvaluation of the currency. It therefore became necessary for any nation using exchange controls as its sole means of combatting the lack of balance to impose extensive controls in order to achieve its objective. The usual outcome of states' employing exchange controls was that they cured the malady (lack of balance in their foreign accounts) by killing world trade. The experience of Germany with exchange controls is a good illustration of the aforementioned generalization. Between 1929 and 1935, Germany's exports (on a quantum basis) fell by some 40 per cent, compared with an 18 per cent decline for the world[2]. What remained of her trade was mainly on a barter basis. Her experience was not only uneconomic, but as is inevitable was discriminatory and hence fraught with political dangers. Lesson number six is that exchange control as a long-run weapon tends to reduce world trade. Since it is exercised by the sovereign state and is usually discriminatory, the practice of exchange control enhances the prospects of national misunderstandings and possible world conflict.

The international monetary experiences during the great depression supplied further lessons. The nations of the world soon learned that a dogged adherence to the gold par values of their currencies led either directly or indirectly through an outward drain of gold to reduced employment at home. Attempts were made to correct both the employment conditions and the gold outflows by devaluation of the currencies (i.e., abandoning old par values and resetting them at new, lower values relative to gold and to other currencies). This action would work admirably for any one country attempting to expand its exports. With a world depression underway, every nation was suffering from domestic unemployment as well as a decline in the volume of its foreign sales. Every major nation, including the United States, resorted to devaluation as a cure. Since the beneficial effects of devaluation stem from relative changes, the attempts of any nation

[2] League of Nations, *op. cit.*, pp. 168–169.

to devalue are foiled by every other nation's trying to play the same game. This is precisely what happened in the 1930's, when one by one the major nations of the world devalued their currencies—each to an extent decided upon by sovereign and unilateral action.

By 1937, the "devaluation cycle" had run its course and the currencies of the world stood in much the same relation to one another as they had in 1929. No good purpose had been served by the successive shocks which such devaluation had given to the international monetary system. Furthermore, those nations whose currencies were genuinely overvalued and needed to be brought into line with other currencies were not able to do so because of the competitive devaluation pursued by other nations. Another lesson to be drawn is that nations should be permitted to alter the values of their currencies, but only after consultation with and the approval of the other nations of the world.

Although devaluation as such had produced no lasting beneficial effects, a byproduct of devaluation did help to initiate a marked revival of world trade and employment.[3] Surprisingly enough, most of this revival took place, not between nations which devalued and those which had not, but it occurred mainly between the nations which had devalued. The explanation of this, it was soon seen, lay in the fact that devaluation brought about in the first instance an increase in a nation's exports and hence in its income, thereby aiding domestic revival and increasing the money flows within the devaluing country. The initial revival stimulated home market activity and in turn led to an increase in imports. The level of economic activity was increased in those countries from which the imports were obtained. This higher level of income was reflected back on the first country, which experienced a further increase in economic activity due to the growing volume of exports. From this experience one very important lesson can be inferred. The best way each nation has of ensuring a large volume of world trade is to attain a high level of employment and income domestically. In such measure as each nation pursues this policy domestically so does it automatically ensure prosperity for all other countries.

In spite of the most honest attempts of each nation to maintain a high level of income of employment and thereby a large volume of imports, cyclical aberrations inevitably persist. The most economic policy can guarantee is to minimize the amplitude and duration of the fluctuations. One effect of the business cycle is that the structure of relative prices of various commodities is affected. In a downswing it is a commonplace that prices of products (finished and manufactured) closest to the consumer fall less than prices of products farthest from the consumer (raw materials). This is due partly to the institutional fact that producers of goods in the first category are able more speedily to reduce the output they place on the market than are producers of primary products; and partly to the fact that the demand for the products closer to the consumer level tends to vary to a smaller extent with variations in income. The discrepancy between these broad groups of prices reflects itself as a discrepancy between receipts and payments of nations. Roughly speaking, nations are essentially producers of raw

[3] League of Nations, *op. cit.*, p. 129.

materials while other nations are producers of finished goods.[4] On a cyclical downswing, therefore, the raw material and agricultural regions will find that their receipts will fall short of their payments in their balance sheet of foreign trade. In an upswing this will be reversed.

There are two courses of action available to the world during a depression. Either the deficit nations borrow their discrepancy from the remaining nations (and pay for it during the prosperity period) or they can curtail their purchases of finished goods by deliberate controls. The latter course of action would lead through a decline in the volume of production in manufacturing regions to a decline in their purchases of raw materials. Thus a cumulative downward spiral would be set in motion. It would appear therefore that the former alternative would be more desirable. In order to achieve it, however, some system must be devised through which the raw material and agricultural regions could have ready access to borrow such foreign exchange resources as are necessary to meet their current deficits. Furthermore, these funds should be available without the debtor country's being required to raise its domestic interest rates or contract its domestic currency circulation. The last lesson derived from the currency experience of the interwar period is that some system is required in which nations suffering a temporary lack of foreign exchange—due to the cyclical ebb and flow of relative prices—can receive such funds by the simple expedient of giving other nations an I.O.U.

It is now time to summarize the lessons of interwar experience and to examine the success of international monetary planning in implementing this experience. The idea of international monetary cooperation is not new. After 1918, a series of efforts were made to achieve a sensible and workable international monetary system. Due either to a lack of knowledge of the real nature of the problem or perhaps to the swift and complicated dynamics of interwar history these attempts were abortive. Between 1936 and 1939, the Tri-Partite Agreement among the world's leading trading areas—the United States, Great Britain, and France—offered the hope that a new basis for cooperative action had been found. The arrangements were of limited scope and further developments were prevented by the outbreak of war. During the war, in fact as early as 1942, the Allies began to plan an international monetary system that would boldly incorporate all the lessons learned in earlier years.

From the brief outline of the interwar experience, it appears that the essentials of any workable international monetary system would require:

A. Stable exchange rates (lesson 5) which are initially fixed by international consultation (lesson 3) and which are alterable, but only with international consent (lesson 7).

B. A mechanism by which temporary discrepancies in a country's balance of payments can be met by an I.O.U. system (lesson 9) which does not require that country to alter in any way its domestic financial policy (lesson 4).

C. The aforementioned domestic policy should always be aimed at achieving high and relatively stable levels of employment and income (lesson 8).

[4] For a contrary view see A. O. Hirschman, *National Power and the Structure of Foreign Trade*, chap. 7.

D. Short-term capital movement to be subjected to control (lesson 2) but other forms of exchange control should be abolished (lesson 6).

E. A system by which the capital needs of war-torn areas or areas which require an extraordinary inflow of capital for reconstruction or development should be met not by speculative flows but by long-term loans through a centrally directed agency or bank (lesson 1).

Item C is primarily a matter of national concern and has been met by a series of employment acts which pledge the governments of most of the world's leading trading nations to maintain a high and stable level of employment and income. Item D was agreed upon in principle but it was realized that the aftermath of war called for a period of adjustment during which controls would be an essential part of the economics of most nations. Item E found its expression in the World Bank, in large intergovernmental loans, and more recently in the European Cooperation Administration.

We shall confine our attention in this paper to items A and B. There was substantial agreement in favor of stable exchange rates to be fixed by mutual consultation and alterable when necessary by consultative agreement. Most experts agreed that par rates should be established soon after the inception of the Fund but there were many who would have preferred to delay the determination of relative rates until the immediate postwar transition period had passed. With respect to the alterability of rates, the Keynes plan suggested that each nation be given the power to unilaterally alter its par rate 5 per cent in either an upward or downward direction after merely informing the Fund. The White version suggested a 10 per cent alteration in the same manner. The final compromise provided for the larger figure, and after a 10 per cent variation which would be automatically approved, further variations in the par could be accomplished if a majority vote by the Fund was obtained.

Several mechanisms are possible with which to meet the needs named under B. It is possible for each nation to sever its domestic currency completely from gold and to use the world's gold stock solely as a means of settling international debts on current account. However, the gold stock was so unevenly distributed that the nations in greatest need of meeting deficits in their international trading account were not in possession of sufficient gold to cover the foreseeable needs. Gold was therefore abandoned as the feasible means of meeting these obligations. The alternative was some sort of book entry in a centrally held ledger administered jointly by an international body. This latter proposal formed the basis of the two formulations presented in April 1943 as preliminary drafts of an international monetary system. The British and American proposals came to be known as the Keynes and the White Plans after their principal authors. In April 1944 a joint plan emerged and provided the basis for an international conference at Bretton Woods in July of that year. At this meeting it was decided that upon the termination of hostilities an International Monetary Fund would be organized, embodying a working plan for the smooth settlement of international payments. In December 1945 the Fund commenced its organization plans.

The real difficulties began when the time arrived to translate the generally accepted principles into concrete action. Five broad problems can be distinguished

and the future of the Fund will depend to a great extent on the adequacy of answers to these problems.

1. How large a buffer stock did each nation require if the Fund was to successfully meet postwar balance of payment needs? The Keynes Plan had suggested $25 billion to $30 billion for the world as a whole, distributed among the nations in proportion to their prewar trade on the basis that each nation should initially receive a total drawing facility equal to 75 per cent of its average annual visible trade in 1936–1938. The White Plan suggested $5 billion as an adequate total. There was a considerable divergence of opinion between the two. The Fund was inaugurated with a total of $8.8 billion distributed on the basis of a complicated index which included gold holdings of each member, its national income, and the fluctuations in its prewar balance of trade. Adequacy was not the sole determinant of this figure; in part, it represented the extent to which the chief surplus nation, the United States, was willing to go in granting more or less automatic credit to a world which was sorely in need of its exports. Since each nation was to be permitted to draw at the maximum rate of 25 per cent of its quota, a nation's quota represented the total deficit it could accumulate in its trade with other members or the total deficit other members could accumulate in their trade with it. If the demands upon the Fund for foreign exchange were concentrated exclusively upon dollars the total demand would be the sum of the quotas of all foreign countries ($6,050 million) plus their gold contributions or about $7 billion. However, the dollars available in the Fund would initially amount to the $2,750 million contributed by the United States, plus the gold contributions of all other countries, amounting to about $1 billion or a total of $3,750 million. It was and is impossible to make any accurate judgment based on figures alone whether the breathing space offered by credit facilities of this magnitude would suffice to meet balance of payment needs. It is necessary to have some knowledge of other factors before such a judgment can be made.

In the first place, how great a part of the world's postwar needs were to be met with direct intergovernmental loans or gifts? In the second place, how large would the deficits be after these loans and gifts were granted? An answer to the last question in turn depended upon several other issues. How accurately would the new par rates of exchange be established in the light of the purchasing power of the respective monetary units? How soon would economic controls be abandoned? How rapidly would the reconstruction of Europe proceed? What were the chances of revival of multilateral trade? How much would a large creditor nation like the United States be willing eventually to purchase annually from nations now debtors?

It is perfectly clear that the problems posed are extremely complex and the answer only very roughly predictable if at all. The Fund's resources alone were and are not meant to meet all the postwar discrepancies in international payments. If this were the case, the Fund would have broken down already. The Fund permits a total annual drawing by deficit nations of some $1.5 billion. Up to December 1946 the postwar balance of payments account of the United States showed direct loans and gifts to nations in excess of $9 billion. Even this amount

has been far from sufficient, and the European Recovery Program contemplates further direct American aid over the next four years, variously estimated at between $15 billion and $20 billion. These substantial dollar requirements exist in spite of the fact that over most of the globe nations are still controlling and rationing foreign purchases. Because of intergovernmental loans on such a vast scale and the widespread practice of exchange controls, the main burden of providing a means of settling international deficits has not yet fallen on the Fund, although it has aided nations since it commenced operations in the spring of 1947. The question of the Fund's ability to meet the needs of international monetary transfers cannot be answered as yet. Even more remote is the answer to whether it will be able to meet the needs of a world in which controls are abandoned as an exchange rationing device.

2. A second and closely related point concerns a crucial question of procedure. The Fund in theory is meant to provide credit to cover only temporary discrepancies in a nation's balance of payments, which correct themselves in time. Should a fundamental disequilibrium arise, the Fund does not throw its resources down the drain by filling a permanent gap in the nation's balance of payments. It should take consultative steps to eradicate the cause of the disequilibrium. In practice, it is not easy to diagnose a fundamental as opposed to a temporary disequilibrium and it is even more difficult to cure one. Numerous definitions and remedies have been put forth but a pragmatic answer to this problem has thus far not been obtained. It is known that "fundamental" disequilibria are always to be expected in a dynamic world in which changes in tastes, fashions, technology, discovery, population, and capital accumulation are taking place. Particularly is this true since these changes affect different regions in different ways and therefore upset the balance in international payments. The presence of such disequilibria manifest themselves either through a persistent deficit in a country's balance of payments or in a persisting tendency of the nation to suffer a level of unemployment greater than that obtaining in the remainder of the world.[5] But how long do these symptoms have to exist before they can be labelled "persistent"? While we can roughly define as healthy any situation which is characterized by the coexistence of a balanced foreign account with as high a level of employment as exists elsewhere, we still do not have any unfailing rule which can tell us whether the nonexistence of these two criteria is temporary and therefore self-correcting, or persistent and requiring definite corrective action. Since one of the Fund's chief raisons d'etre is the avoidance of unnecessary, upsetting changes in the structural framework of international trade, a correct answer to the question of a definition of, and the evidence of, a fundamental disequilibrium is a matter of fundamental importance.

3. Granting for purpose of argument that a correct diagnosis of the condition of a nation's balance of payments is achieved, a third problem to be raised relates to the cures that shall be prescribed. The most readily available answer

[5] R. Nurkse, *Conditions of International Monetary Equilibrium*, Essays in International Finance No. 4, Princeton, 1945.

and the one which is most strongly depended on by the Fund at present is an alteration of par values. However, devaluation is not always an unmixed blessing for the devaluing nation. Nor are there sufficient data to prescribe a given amount of devaluation for a known magnitude of deficit in a country's balance of payments. In the first place, the exact effects of devaluation depend upon an equation which contains constants the value of which we can only guess. In the second place, the cross-effects initiated in other nations by a devaluation in one have not been quantified. There is the additional problem that devaluation, to be most effective, requires swift and sudden announcement, since prior knowledge of devaluation inevitably leads to a desire to export capital directly or indirectly in the form of goods, or the anxiety to purchase as much from abroad as is possible before devaluation is official. The result of any or all of these measures is to increase the deficit already present. However, a swift move is not readily compatible with a long period of consultation within an international body. An allied problem exists because devaluation changes the shares of the national product going to various economic groups within a nation, thereby resulting in much lobbying before such a measure is enacted.

Despite these difficulties, devaluation is the best remedy to restore balance to the trade of a country which manifests a peristent deficit. It is entirely possible that a situation may arise in which not one, but many nations, show such deficits. In such a case, there must be one nation displaying a persistent surplus. Should such a country be required to revalue its currency at a higher level? Both the Keynes and White Plans agreed that part of the structural adjustment should in such cases be shouldered by the surplus nation. The Keynes Plan provided for advice from the Fund to any nation accumulating a persistent surplus. It also made provision for mild discouragement to credit accumulating nations by levying an interest charge against credits accumulated above a certain sum. The White Plan was more stringent with creditors, and in its final form the Fund adopted these more stringent measures. Should one nation develop a persistent credit balance on current account—i. e., a nation whose currency is becoming scarce in the Fund's portfolio because other nations need to borrow it persistently—the central authority can ration this currency. Should this measure not accomplish its objective, other nations may enforce controls and restrictions in their trade with the scarce currency nation. This is really no solution at all. The entire purpose of the International Monetary Fund is to remove the monetary obstacle to the free flow of trade. A solution requiring the use of exchange control and discriminatory tariffs obviously bypasses the basic issue.

The solution would lie in removing the causes of the persistent surplus. However, it is not too clear how this can be achieved. Even if we do know the remedies, can the requisite measures be enacted? The currency which is now and most likely to be scarce is the United States dollar. This scarcity may be attributable to either or both of two causes. The United States price level is too low in relation to the external value of the dollar, thereby making this country an advantageous market in which to buy and a difficult one in which to sell. Another explanation is that the United States, because of her world leadership

in technology and industry and resources, needs to export large quantities of capital in the trade relations with her war-stunted fellow nations, but is failing to export capital in quantities commensurate with requirements of its fellow nations.

The solution for the persistent dollar shortage requires a solution far more complex than the simplified summary given above. The late Lord Keynes, well known for his devotion to rational planning to solve such problems, expressed the hope that the dollar scarcity would be cured by the traditional classical means of a rise in the internal price in the United States "which was fast becoming a high-living, high-cost country."[6] Despite the persistent rise in the American price level, the dollar scarcity has continued unabated; on the contrary, the rise in United States prices has not cured the dollar deficits of other nations, but rendered the situation worse. It is fairly commonly accepted that the rise in American prices was partly responsible for the severity of the dollar deficits of Britain in 1947.

The problems surrounding the exports of American capital are extremely complex. The United States today is in much the same position as Britain was in the nineteenth century. Her rapid technological advance coupled with her insulation from the ravages of war supplied her export trade with a large relative advantage, as Britain had then. Here the similarity ends. For geographic reasons, Britain was a buyer as well as a seller, and an inevitable importer. There, as early as 1846, the agricultural groups had shrunk to such insignificance that they were powerless to prevent the repeal of the tariff on imported corn. The United States, with its huge mixed agricultural-industrial economy, is in a vastly different position with regard to buying. Not only are her needs for foreign goods less, but there are strong domestic political forces which still favor a protected, self-sufficient economy. The recommendations of numerous authorities that the United States as a matter of deliberate policy buy from the rest of the world as much as is bought here are more easily suggested than implemented, in view of the structure of politico-economic group alignments in this country.

An alternative to increasing current purchases would be for the countries with a persistent surplus to invest this surplus abroad. While such a course of action would relieve the pressure of the exchanges of deficit countries in the short run, these capital investments eventually yield dividends and interest which must be returned to the investing country. The only way in which these returns can be obtained is in the form of goods and services. Thus the adjustment of balance of payment deficiencies by capital transfers from surplus to deficit countries leads us back to the problem that was not solved in the first instance. There is, however, the possibility that in the interval between the original loan and the servicing and eventual repayment of the debt, several factors may operate in the debtor country. Technological advance in the borrowing country may make it less dependent on the United States as a supplier of goods. Furthermore, the rise in the American price level may lead to spending of more dollars abroad and fewer

[6] J. M. Keynes, "The Balance of Payments of the United States," *The Economic Journal*, June 1946, p. 185.

foreign purchases in the higher priced country. Changes and shifts of population in the United States from the farms to the richer industrial areas may bring about a change in political forces with resultant legislation favoring the manufacturing sector, thereby reducing the tariffs on raw materials and encouraging their import into this country. These latter forces are already in evidence, and in international conventions the United States is the leading espouser of freer international trade. The really important factor in ultimately solving a persistent dollar shortage is the ultimate increased productivity of the world to standards more comparable with those of the United States. In the last analysis, the issue depends on forces which are impossible to predict, one of the most important of which is the freedom from war and from the fear of war with its vast requirements for defense expenditures.

4. The fourth problem is not separable from the previous points; it concerns the initial par values established for postwar currencies. At the time the Fund was inaugurated in 1945, it was not possible to shelve the issue of relative par values, or for that matter, to await the solution of all the other unknowns in the sphere of international monetary relations. There existed no a priori method of determining what the "correct" pars should be. This same problem had been met in the twenties by referring to the relative changes which had taken place in national price levels, using 1913 as a bench mark. In 1945, no "normal" bench mark existed which could provide a standard against which price changes could be measured. Furthermore, there were several potent factors which overshadowed the purely economic question of finding correct pars.

Most nations had been severely damaged by the war and their exports were limited, not by how much they could sell abroad at competitive prices, but by how much they could spare for the export trade out of a diminished total product. In such cases devaluation, which increases exports by making a nation's products cheaper abroad, could serve no useful purpose, since the total sales abroad were limited by physical productivity and not by price factors. Devaluation would likely have worsened the balance of payments of these countries by decreasing the foreign currency (actually dollars) receipts on such sales as they could make. Furthermore, such a course of action would have caused a rise in the local prices of essential imports from the dollar countries and would have intensified the forces of inflation which prevailed in every country hurt by the war. Governments faced with increased prices and costs would have incurred larger budgetary deficits, which might have led to intensification of the existing political instability.

Great Britain was faced with the prospect of transforming her entire economy, due in part to the wartime loss of her overseas investments. She was attempting to maximize her exports and minimize her imports to close her balance of payments deficit. The devaluation of the pound *vis a vis* the dollar (Britain's main source of imports) would have magnified the imbalance in her international accounts. After consultative attempts to find suitable values for national currencies, the Fund in December 1945 decided to accept the values prevailing in

October 1945—a decision which meant an overvaluation of most currencies relative to the dollar.

Nobody doubted that this decision was motivated primarily by political expediency and the Fund was explicit in showing that the par values were not expected to remain for long. Some critics were quick to point out the dangers inherent in this course of action. Overvalued pars could be maintained by artificial controls. The Fund sanctioned these controls as a transitional necessity, hoping to remove them at a later date. Objection was raised to this course of action on the grounds that the pattern of trade which developed within the environment of such controls would set up vested interests that would oppose any later attempts to change their status by altering the par values of currency or lifting the controls. Three years later, such objections appear more and more justified. The fact remains, however, that any alternative course of action may have led to the early demise of the Fund, destroyed on the rocks of political realities. In some cases, notably Italy and France, partial political stability and the revival of trade, bringing with it price competition, have made possible revaluation of currencies to lower and more appropriate levels. The continuation of the postwar trend toward greater competition in the international sphere (as sellers' markets give way to buyers' markets) has brought with it the necessity for similar devaluations of the currencies of other major nations as well—among others, the pound sterling and its satellite currencies—to levels more in line with the dollar.[7]

5. The fifth problem is concerned with the difficulty of changing the patterns of controlled trade once they are established. The spread of the socialist form of government throughout the world has brought in its wake centralized control over the nation's balance sheet. These controls are manifested in state trading, either directly or indirectly. In either case, the state makes the over-all decisions of how much a nation should buy or sell in the aggregate and frequently in detail. The British experience is illustrative of this phenomenon. When this situation obtains, the states determine within a broad area what their balance of payments, surpluses or deficits, should be. Deficits are no longer accidental or cyclical (hence, self-correcting) but are an outcome of deliberate policy. There is little the Fund can do about this development. Admittedly, it can guard against the use of such policy as far as its own resources are concerned. The Fund can exercise control over its resources in two ways. First, drawing rights are not automatic and each drawing has to be sanctioned by a majority vote of the Fund.

[7] On September 18, 1949, the United Kingdom devalued the pound by approximately 30 per cent. The sterling bloc and several other nations followed with swift action in devaluing their own currencies. By the middle of October 1949, 27 countries had reduced the par values of their currencies relative to the dollar. The majority of these countries devalued to the same extent as the United Kingdom. The developments in the price levels of these countries after 1939 did not coincide; it would appear that the extent of devaluation should have differed in each case. The recent actions reflect the difficulty of reconciling the need for consultation prior to devaluation with the necessity for swift action on the one hand and historic-commercial ties on the other.

Secondly, there is a repurchase clause which ensures that every deficit a nation incurs is payable through the Fund's mechanism only to the extent that a nation is willing to pay half the deficit directly out of its own holdings of gold or foreign exchange.[8] This ruling does much to ensure that only legitimately arising deficits are cleared through the Fund, since the willingness of a nation to pay half with its non-Fund holdings can be taken as an indication that the imbalance of payments was unavoidable. It should be apparent that these provisions will have little effect upon the trend toward controlled economies. The success of the Fund can ensure that the growth of free multilateral trade will not be hampered because of monetary obstacles.

In concluding, it may be stated that the International Monetary Fund is merely one institution covering one aspect of a broad problem—world trade—in which each part is dependent for its success on the success of every other. Some of these parts have been solved, but most still await a solution. The passage of time should witness many more solutions.

The determination to achieve and maintain high and stable national levels of employment will, if successful, serve to relieve some of the more pressing international problems. On the other hand, little has been done to ensure that capital will flow freely from nation to nation and thus lessen the problem of monetary instability. Despite this, vigorous steps are being taken which, even though for other reasons, have the same effect, as capital flows from surplus to deficit regions. In the sphere of commercial policy, direct attempts are being made to achieve a free flow of goods unhampered by tariffs and other restrictions. These have yielded sparse results to date.

It would seem that the results of the course of events outside of the Fund will determine the success of the Fund more than the actions taken within this organization. This is not to deny the role which the Fund can and may play. Establishment of the International Monetary Fund marks a real advance over the chaos of the interwar years in at least four respects: the provision of fixed exchange rates, the mechanism for consultative alterability of currency par values, the attempt to emancipate the domestic monetary structure from the ebb and flow of international payments, and the provision of a buffer credit with which nations can meet temporary balance of payment deficiencies, each provides an essential link in the chain of international monetary order.

The Fund must not be contrasted with the anarchy of the interwar years, for against this period, most systems would stand out as efficient. It should be compared with the preceding international system, the gold standard of 1913, which it seeks to replace. Any advance in organization which can justifiably be lauded should finally be measured against the problems it seeks to solve. The gold standard, too, provided a system (in contrast to the lack of system of the interwar years) which worked well but which collapsed in the face of serious monetary upsets. Is the organization provided by the Fund better equipped than the gold standard to guard against this contingency? The only basis for an affirm-

[8] Exceptions are permitted in the case of nations which have run short of such holdings.

ative reply to the point lies in the separation of domestic currency policy from the balance of external payments. Except for this innovation there is nothing within the Fund itself to indicate that it will be able to withstand forces of the order of magnitude such as smashed the gold standard system.

In certain respects, the question reduces itself to another form—will the new system be confronted with monetary tides of the aforementioned magnitude? The answer to this question does not lie solely within the sphere of economics but elsewhere. It may not be too optimistic to assert that social problems bring forth the knowledge by which they can be solved. So it appears to have been in the field of international economics. But somewhere in the past these two aspects got out of step and organization has lagged behind. A lull in history—a decade of slow change in the conditions of world trade—may enable us once again to run abreast of the problems of change involved in managing a complex world. Whether the world will enjoy such a lull is far beyond the control of the International Monetary Fund; but it is essentially on this point that the issue of its eventual success or failure depends.

AN APPROACH TO THE THEORY OF MULTIPLE PRODUCTION

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The conceptual mono-product firm of traditional price theory stands in sharp contrast to the typical multi-product firm of modern industry. It is the object of this paper to set up a theoretical basis for multiple output and price analysis, beginning with the case in which one firm produces two goods, moving from it briefly into a broader area of applicability,[1] and, finally, directing attention to a group of subsidiary problems.

I

In the language of mathematics the analysis of pricing and output problems of the usually assumed mono-product firm has been reduced to the algebraic or geometric solution of simultaneous two-variable demand and production functions.[2] The relationships involved have customarily been symbolized by two-dimensional graphs—one group of related lines representing demand, another supply—with one axis measured off in monetary units, the other in quantitative units of output and purchases. Quantitative and monetary values for the unknowns have been discoverable by reference to critical lines, intersections, and areas, related to the basic and particular conditions of short- or long-run equilibrium in firm and industry. Since the analysis of multiple production involves more than the customary two basic variables, it is not possible to represent revenue and cost functions in this customary and simple way. This situation suggests the use of indifference curves. We may direct our attention first toward revenue.

Let us assume that a firm is in position to serve the two-product demand represented by the slightly sloping sales curves of Diagrams a and b of Figure 1. These curves have been drawn across a field of rectangular hyperbolas. The rectangular hyperbola corresponds, of course, to the algebraic equation $xy = c$. This means that the products of the coordinates at all points along any such curve are equal to the same amount. In each of the diagrams the hyperbola nearest the axes is so placed that this product equals an arbitrary constant K. The second is so drawn that the corresponding product equals just twice this amount. Succeeding curves include all coordinates with products of $3K$, $4K$, $5K$, and so on.

In the case of the commodity of Diagram a, the quantity indicated by point A when sold at the corresponding price will bring a gross revenue of K, the

[1] See Geo. J. Stigler, *The Theory of Price*, chap. 16, for a discussion similar to that which follows at a few essential points. See also Kenneth E. Boulding, *Economic Analysis*, chap. 31.

[2] This type of analysis is adequate to the treatment of perfectly complementary joint production. Because of this fact attention will be directed here toward those cases wherein the propositions between the two products may be varied with complete independence. See George J. Cady, *Entrepreneurial Costs and Price*, chap. VIII.

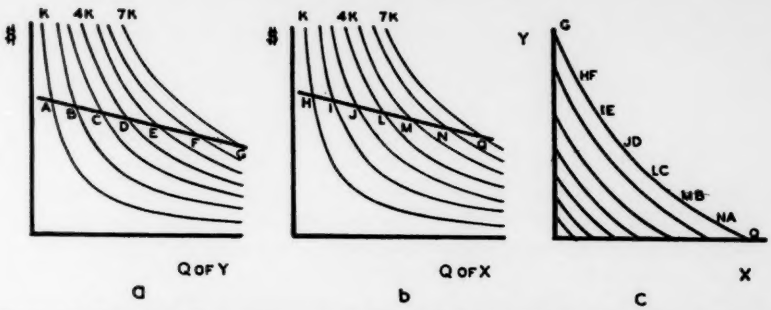

FIGURE 1. GRAPHICAL REPRESENTATION OF REVENUE INDIFFERENCE IN THE CASE IN WHICH SALES CURVES OF BOTH Y AND X ARE GRADUALLY SLOPING SYMBOLIZING RELATIVELY ELASTIC DEMAND

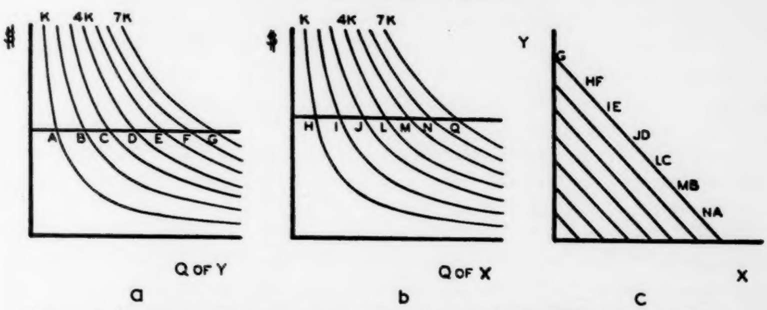

FIGURE 2. GRAPHICAL REPRESENTATION OF REVENUE INDIFFERENCE IN THE CASE OF PURE COMPETITION IN THE MARKET FOR BOTH Y AND X

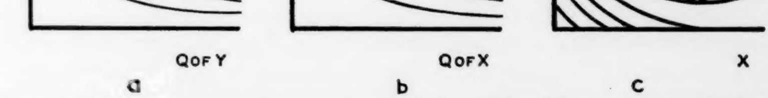

FIGURE 3. GRAPHICAL REPRESENTATION OF REVENUE INDIFFERENCE IN THE CASE IN WHICH THE DEMANDS FOR BOTH Y AND X ARE RELATIVELY ELASTIC AT HIGH PRICES AND RELATIVELY INELASTIC AT LOW

amount of B a revenue of $2K$, the amount of C a revenue of $3K$, and so on to G yielding $7K$. Similarly, the sale of the quantity of point H of the second commodity, Diagram b, at the corresponding price will bring a total revenue of K,

the quantity of I a revenue of $2K$, the quantity of J a revenue of $3K$, and so on to that of Q yielding $7K$.

As far as total revenue is concerned it is clearly a matter of complete indifference to the firm whether G of the commodity of Diagram *a*, which will be called henceforth commodity Y, or Q of the commodity of Diagram *b*, commodity X, is sold. Both will yield a revenue of $7K$. Moreover, the combined sale of F of Y yielding $6K$ and H of X yielding K will likewise bring a revenue of $7K$. Other "$7K$" combinations are, E of Y and I of X, D of Y and J of X, C of Y and L of X, B of Y and M of X, A of Y and N of X.

These combinations may be presented graphically. In Figure 1, Diagram *c*, the vertical axis is measured off in units of commodity Y and the horizontal in units of X. Along the outermost curve are points representing G of Y and none of X, F of Y and H of X, and so on. Because of the possibility of selling amounts of each good greater or less than the particular quantities mentioned, a continuous line connecting these points has meaning. Such a line indicates all possible combinations of the two commodities which, if sold, will yield the $7K$ revenue. Similarly, $6K$, $5K$, $4K$, $3K$, and $2K$ revenue indifference curves may be drawn occupying positions below and to the left of the curve shown. They will form a system of lines all slightly convex to the origin as is the $7K$ curve. This system is representative of revenue indifference when the sales curves are slightly sloping with an elasticity greater than unity throughout their significant lengths. This is only one of many conceivable situations.

Another possibility is that in which both products are sold in purely competitive markets. This case is symbolized by the horizontal sales curves of Figure 2, Diagrams *a* and *b*. Indifference curves may be developed here in precisely the same way as above. The $7K$ revenue indifference curve, a straight line, is shown with explanatory lettering in Diagram *c*. The system of curves is a group of parallel lines.

A third possibility is represented in Figure 3. In this case both sales curves represent demand elasticities of greater than unity for a part of their lengths—to the point of tangency with the outermost rectangular hyperbolas encountered—and beyond these points elasticities of less than unity. The corresponding system of indifference curves is shown in Diagram *c*. Coordinates are indicated along the $7K$ curve. It will be noted that above F values for Y and beyond M values for X, all curves curl back. In the case of each commodity total revenues from sales at higher rates decrease. The curve representing $10K$ total revenue is completely closed, as would also be the $6K$, $7K$, $8K$, and $9K$ curves if shown in their entirety. LF indicates the combination yielding absolute maximum revenue, $11K$.

Figure 4, Diagram *a*, omitting henceforth the detailed analysis, represents the situation in which commodity Y is sold in a purely competitive market and X in a competitively monopolistic market. In the case of Diagram *b*, Y is assumed to be sold under the condition of relatively elastic demand, at least for the significant portion of its sales curve, and X under the condition of relative elasticity to a point and then relative inelasticity. The system of Diagram *c* is based on

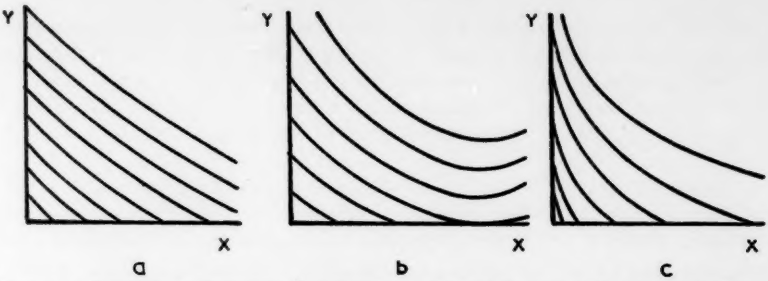

FIGURE 4. SYSTEMS OF REVENUE INDIFFERENCE CURVES IN WHICH Y AND X ARE SOLD UNDER VARYING DEGREES AND TYPES OF DEMAND ELASTICITY

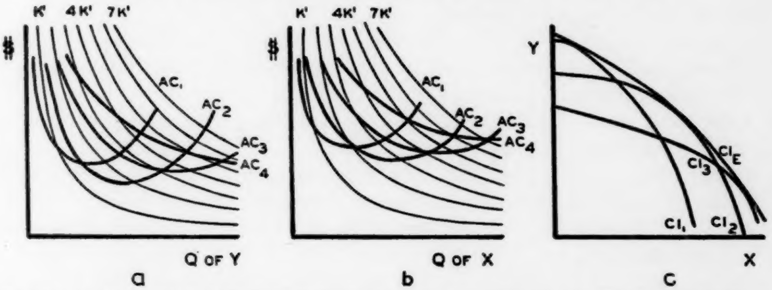

FIGURE 5. GRAPHICAL REPRESENTATION OF THE DERIVATION OF COST INDIFFERENCE CURVES IN THE CASE OF DISECONOMIES OF LARGE-SCALE PRODUCTION IN THE CASE OF BOTH COMMODITIES Y AND X

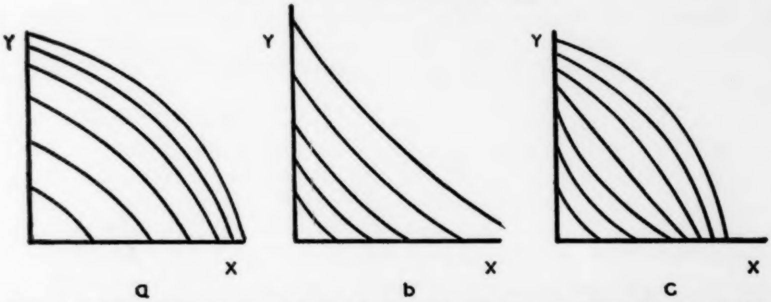

FIGURE 6. COST INDIFFERENCE CURVE SYSTEMS IN THE CASES, RESPECTIVELY, OF DISECONOMIES OF LARGE SCALE, ECONOMIES OF LARGE SCALE, AND ECONOMIES FOLLOWED BY DISECONOMIES IN THE PRODUCTION OF BOTH COMMODITIES

still another pairing of sales curves, with that of X sloping somewhat more steeply than that of Y but both remaining relatively elastic throughout their significant lengths.

It should be borne in mind that the indifference curves shown in the various

"system" diagrams of Figures 2 to 4 inclusive are merely several of many possibilities. Flanking these are a countless number of implied curves of similar slopes and configurations, indicating combinations of commodities X and Y which, if sold, will yield revenues between zero and K, K and $2K$, $2K$ and $3K$, $3K$ and $4K$, and so on. This is an essential feature of the argument of the subsequent analysis.

The situations represented by the six cases of revenue indifference may be labeled for future use and summarized as follows:

Case I. Figure 1, both Y and X are sold under conditions symbolized by gradually sloping sales curves representing the type of elastic demand assumed under the condition of competitive monopoly.

Case II. Figure 2, both Y and X are sold under the condition of pure competition with horizontal sales curves.

Case III. Figure 3, both Y and X are sold under the condition of relatively elastic demand becoming relatively inelastic, symbolic of simple monopoly and some types of competitive monopoly.

Case IV. Figure 4, Diagram *a*, Y is sold in a purely competitive market, X under the condition of competitive monopoly.

Case V. Figure 4, Diagram *b*, Y is sold under the condition of relatively elastic demand, X under relatively elastic demand becoming relatively inelastic.

Case VI. Figure 4, Diagram *c*, Y and X are sold under widely varying degrees of relative elasticity.

II

An analysis of firm costs will similarly yield cost indifference curve systems for various type situations. One case will be treated fully enough, at this point, to suggest method, and the results of similar analyses applied to others will be summarized graphically. Simple, short-run, adjustment entrepreneurship will be assumed with firms operating within the limits prescribed by basic plants[3] of fixed sizes.

Figure 5 represents the case selected for complete analysis. In Diagram *a* are four average cost curves drawn on a field of rectangular hyperbolas. These indicate costs relative to output rates faced by the entrepreneur as he allocates varying portions of his total plant directly to the production of commodity Y. Similar curves in Diagram *b* represent cost conditions with respect to commodity X. Contractual outlays are the significant costs in the case of those factors *not* provided by the entrepreneur or entrepreneurial group, and virtual outlays—opportunity costs—are the significant costs in the case of those which are. The constant and variable costs relating to that portion of the plant used in the production of both goods but directly allocated to neither, such as warehouses and the staff of accountants, are assumed to be distributed between the two in a manner to be described presently. It is sufficient at this point to say that they are included in the cost graphs shown. That the production of each of these goods is assumed

[3] A plant is here defined as a coordination of constant productive factors including both capital and personnel.

to involve eventual diseconomies of large scale is indicated by the fact that the minimum points of AC_3 and AC_4 are higher in each case than that of AC_2.

Variable proportions of the plant may, as indicated already, be used in the production of either good, the remainder to the other and to the over-all production processes related to both. In Diagram *a*, AC_4 represents average total costs when the entire plant is employed in the production of Y. AC_3 represents average costs when a little less than three-fourths of the plant is used for this purpose. It is assumed that a small part of the plant is physically allocated to general operations with about three-fourths of the inseparable costs arbitrarily regarded as a part of the constant costs of Y. In Diagram *b*, AC_1 represents average costs of production of commodity X when the remainder of the plant is used in the production of this good. These costs include the remainder of total general costs. Such inseparable costs, as a matter of fact, may be distributed in any way between the two functions without impairing the general argument.

The same geometric techniques as employed above in the section on revenue may now be applied to AC_3, in Diagram *a* and AC_1 in Diagram *b*. The CI_1 curve of Diagram *c* is the resulting indifference curve, total costs being $7K'$. K' in this case is not necessarily equal to K in the analyses of the previous section.

This assumed distribution of plant as between the two products is only one of literally countless possibilities. AC_2 in Diagram *a* and AC_2 in Diagram *b* are the suitable average cost curves assuming that about equal portions of the plant are used in the production of each commodity and that the inseparable costs are shared equally. The corresponding cost indifference curve—total cost again being $7K'$, is CI_2 in Diagram *c*. AC_1 in Diagram *a* and AC_3 in Diagram *b* represent costs under still another proportional distribution of plant. The corresponding cost indifference curve—total cost $7K'$ again—is CI_3 in Diagram *c*.

These CI curves form a pattern. Additional AC curves and corresponding indifference curves may be drawn for all possible proportional distributions of plant between the two products, assuming in each case the most effective utilization of the portion definitely allocated to neither. No one of these is suitable to the representation of cost indifference under the condition of continuous variability of such distribution. The appropriate curve for such purposes is an enveloping curve CI_E whose two terminal points at the axes indicate the amounts—see the two AC_4 curves—of Y or X that would be produced at a total cost of $7K'$ in mono-product operations, with the entire plant used in the production of one or the other alone.

In the same way enveloping cost curves may be built up with total costs of $6K'$, $5K'$, $4K'$, and so on. Under the condition of diseconomies of large scale the curves will be concave to the origin as indicated in Figure 6, Diagram *a*.

Similar techniques may be applied to a situation represented by two sets of AC curves reflecting lower and lower minimum costs with larger and larger operational scales for each commodity. A system of enveloping CI curves suitable to this situation is shown in Diagram *b*. In the case of economies of large scale for each product the curves will be convex to the origin. When economies and then diseconomies are encountered the enveloping CI curves will be convex

close to the point of origin, will straighten out and then become concave. Although a number of other cost situations may be conceived the analysis will be confined to these three cases.

Case A. Figure 6, Diagram *a*, both commodities produced under the condition of diseconomies of large scale.

Case B. Figure 6, Diagram *b*, both commodities produced under the condition of economies of large scale.

Case C. Figure 6, Diagram *c*, economies followed by diseconomies of large scale in the case of both commodities.

These three cases of two-product costs may be combined with the six cases of two-product revenues, of course, in 18 composite cases. To these we shall now direct attention.

III

Let us assume that an entrepreneur, motivated by the desire to maximize his residual income, is fitted to produce either or both of two goods, in varying proportions, the one with the other. Of all output yielding him the same revenue, there is one combination at which the total cost of production is minimized. All such combinations may be compared with respect to total revenues and total costs and the one finally selected at which the difference is maximized. The various factors involved in production policy determination in the 18 composite cases are represented in the diagrams of Figures 7, 8, and 9. In these diagrams CI curves—solid—are superimposed on RI curves—dashed.

In Figure 7 the basic assumption is the cost condition of Case A. The existence of diseconomies of large scale gives rise to a system of cost indifference curves concave to the origin. In between the curves shown others are implied. In the diagram labeled A-I the revenue situation of Case I is paired with this cost condition.[4] Successive cost indifference curves outward from the point of origin are assumed to indicate combinations of Y and X which can be produced at total costs of K', $2K'$, $3K'$, $4K'$, and $5K'$.

RI_3 designates all combinations of Y and X which, if sold, will yield the gross revenue of, say, $5K''$. If a one-product policy were followed, see the terminal points A and B, and either Y or X produced solely, the cost would be $5K'$. If the two commodities were produced in the proportions indicated by points C or D, the same revenue, $5K''$, would be secured, of course, but the cost would be $4K'$. Either of these policies would be more profitable, or less unprofitable, than a mono-product plan. Combinations of Y and X indicated along this curve between A and C, and D and B would involve total costs greater than $4K'$ but less than $5K'$. If the two commodities were produced and sold in the proportions indicated by point E the total cost would be only $3K'$. At this point the revenue of the RI_3 curve, $5K''$, is obviously matched with the lowest possible cost. Combinations represented along RI_3 between E and C, and E and D would involve a

[4] Diagram A-II applies to revenue Case II, A-III to revenue Case III, and so on. See above page 330.

cost greater than $3K'$ and less than $4K'$. Of all output-sales combinations indicated along RI_3 the one at E would yield the greatest possible positive entrepreneurial residuum or the smallest negative residuum, $5K''$–$3K'$.

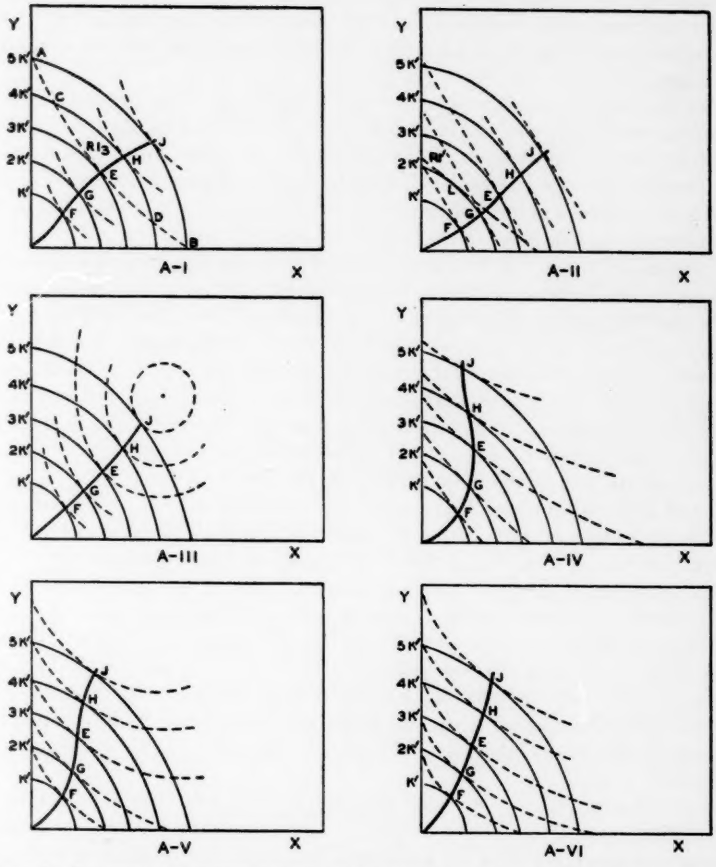

Figure 7. Graphical Representation of Six Cases of Potential Multiple Production with Diseconomies of Large Scale in the Production of Both Y and X

Segments of other EI curves are drawn which are tangent to the lowest possible CI curves at points F, G, H, and J. A line drawn through these points is necessary to indicate other possible residual income maximizing combinations since the RI and CI curves shown here are presumably flanked by many others. Somewhere along the line FJ is the point at which revenue minus total cost will be the highest possible. This point will represent the best production policy.

Prices at these outputs may now be discovered by reference to the original sales curves from which the revenue indifference curves were derived.[5]

The same analysis applied to the other five cases of Figure 7 will yield somewhat similar *FJ* alternatives curves. The fact that none of these curves touches either axis except at or very near the origin indicates that in a situation of internal diseconomies of large scale there is a definite compulsion toward bi-product operation.

Case A-II applies roughly to many types of agriculture. The parallel *RI* curves symbolize pure competition. Since on most small farms the constant factors outweigh the variable in significance, mono-product operations involve the nonuse of considerable portions of factoral equipment during off-production seasons. This means diseconomies of large-scale production in the case of any one commodity. Multi-product operations are the inevitable consequence.

Diagram A-II provides the opportunity of establishing a principle applicable to all six cases. Suppose that a rise in the price of commodity Y takes place with costs and the price of X temporarily unchanged. Under this condition the *RI* curves will assume a new slope such as that of *RI'*. It will be seen that this curve is tangent to a *CI* curve at L. This means a shift of output with probably less of X and more of Y produced. This shift will be symbolized by a bending of the entire *FJ* alternatives curve toward the Y axis. All changes in the demand for either or both goods by thus affecting the slope and configuration of the *RI* curves will exert an influence on production policies.

It will be noted in Cases A-IV, A-V, and A-VI that there is a clear tendency for the production of Y to exceed the production of X. The demand for X was assumed to be less elastic than that of Y in each of these cases.

Exit is indicated, factoral specialization permitting, or the examination of the potentialities of entirely different combinations of products suggested, in any case, if costs are greater than revenues at all points along the *FJ* curve. If operations show abnormal profits, competitive entry may be expected. In the long run, of course, firms may be expected to move by rational plan or by trial and error toward more efficient plant sizes and productive techniques. Such dynamic factors will cause revenue and cost indifference curves as well as *FJ* curves to shift positions.[6]

In the cases of Figure 8 the basic assumption is the cost condition of Case B. The *CI* curves are all convex to the origin. Using the same analytical techniques as in the six cases of Figure 7 the alternatives curves may be discovered. In the B-I case this curve lies along the vertical axis. This means that mono-product operations are indicated in the situation wherein economies of large scale are combined with very elastic demands in the case of both products. Of course, in a constant plant, diseconomies will eventually be encountered. Presumably, however, the residual income is maximized before such diseconomies arise. In this case output and price are determined by the entrepreneur according to methods symbolized by the familiar devices of mono-product analysis.

[5] See Figure 1, Diagrams *a* and *b* above.

[6] See below p. 338.

Similarly, in Case B-II, mono-product operations are indicated along the vertical *FH* alternatives curve. In this situation, as also in B-I, a significant change in demand from *Y* or toward *X* may lead the entrepreneur to shift completely

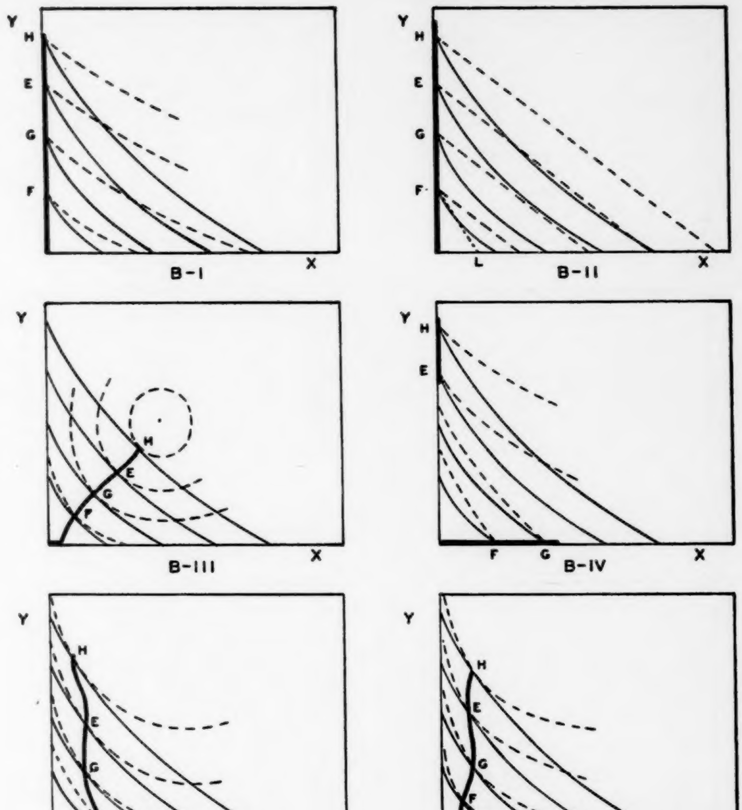

FIGURE 8. GRAPHICAL REPRESENTATION OF SIX CASES WITH ECONOMIES OF LARGE SCALE IN THE PRODUCTION OF BOTH *Y* AND *X*

over to the production of *X*. This is consistent with the traditional emphasis in mono-product theory on opportunity costs, entry, and exit.

In Cases B-III, B-V, and B-VI, the production of the two commodities is indicated, except that, if production and demand conditions are such as to maximize revenue minus costs close to the point of origin, the production of *X* alone may be advisable. In Case B-IV the choice seems to lie between the production

of one or the other alone. The high monopolistic price of X in a small operation and the low cost of and steady competitive price of Y in a larger are the determining factors here.[7]

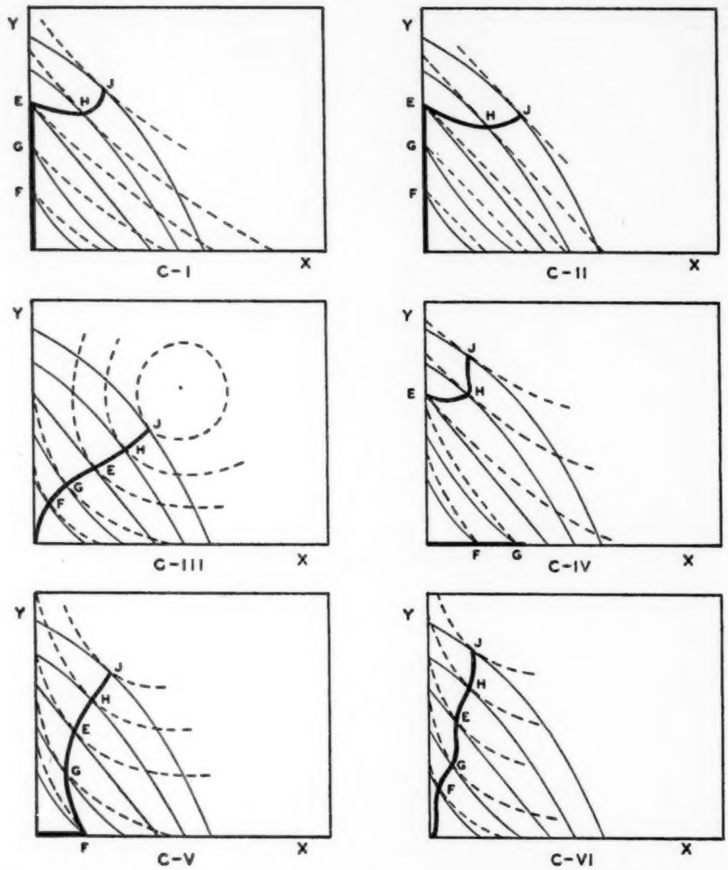

FIGURE 9. GRAPHICAL REPRESENTATION OF SIX CASES WITH ECONOMIES FOLLOWED BY DISECONOMIES IN THE PRODUCTION OF BOTH Y AND X

The basic assumption underlying Figure 9 is the cost condition of Case C. The emergent FJ alternatives curves are self-explanatory. Except in Cases C-III and C-VI a firm with a small over-all plant will maximize its residuum under monoproduct policies; a larger plant firm will diversify.

[7] The plant may, of course, be large relative to a restricted market for X, but atomistic relative to a broader market for Y.

IV

The most significant general principles emerging from the analysis of the immediately preceding section may be listed as follows:

1. When potentially two-product firms, immediately or eventually in their most effective operational scales, encounter the diseconomies of large-scale production in the case of both goods, these firms will tend toward two-product operation no matter what the conditions of demand. (See all cases of Figures 7 and 9.)

2. Under the condition of economies of large-scale production and highly competitive markets for both goods, firms will tend toward mono-product operations. (See Figure 8, Cases B-I and B-II and Figure 9, Cases C-I and C-II.)

3. There is a tendency toward one-product operation when very small plant firms operating under some economies of large scale are potentially serving demands of differing relative elasticities. The good of lower demand elasticity will be produced. (See Figure 8, Cases B-III, B-IV, and B-VI and Figure 9, Cases C-IV, C-V, and C-VI.)

4. Under the above conditions large-plant firms will tend toward the production of the good having the greater demand elasticity if the difference is pronounced. (See Figure 8, Case B-IV.)

5. Under the condition of economies of large scale, large-plant firms, serving markets which are not too highly competitive, with sales curves indicating a low degree of relative elasticity, will tend to follow a two-product policy. (See Figure 8, Cases B-III, B-V, and B-VI.)

The fact that three of the above general principles relate to mono-product operation should not be allowed to hide the tendencies leading toward multiple production. Of the five principles listed, the first has the widest and most universal applicability.

These 18 case analyses suggest a method of attack on the general problem of multiple production. Obviously, however, not all two-product possibilities have been dealt with. The same method may be applied in a fourth general cost condition with conclusions as follows:

6. When one of two possible products, both with highly elastic demands, is produced under economies of large scale and the other under diseconomies, small firms tend toward the sole production of the latter, large firms toward the sole production of the former.

7. Where high monopoly profits are possible because of low relative sales curve elasticities, both goods will be produced under these cost conditions.

V

The foregoing has been referred to as "an approach to the analysis of multiple production." It suggests at least eight things yet to be done.

1. An area of continuing usefulness and pertinence of the mono-product analysis must be staked out. It is adequate to deal with many actually or ostensibly multiple product cases in addition to that of perfectly complementary jointness. When the two (or more) products of a firm are made in physically separate

plants, each for the time being inflexibly fixed in size, the control authority may practice simple mono-product, short-run, adjustment entrepreneurship in the production and pricing of each. Each subfirm must cover plant costs. If a portion of the basic plant, such as storerooms, buying and selling personnel, or the staff of accountants, is employed in the production of both (or all) goods and not strictly allocated to either (or any), the operations must show additional residual earnings sufficient in sum to cover costs of these unallocated sections. Thoroughgoing departmentalization may create virtually independent mono-product firms, housed together, but under separate direct controls. Wherever separate marginal costs and marginal revenues are discoverable, for the two (or more) products, operations will tend to be carried to their point of equalization.[8] Whenever it becomes advisable or necessary to modify or reallocate plant the analysis of this article becomes pertinent.

2. The theoretical structure should be refined and expanded so as to deal with the possibility of individual firms' expanding and contracting plant size, modifying techniques, or entering and exiting from the production of either or both commodities.

3. The implications of the fact that many products which may be produced and marketed together are related as substitutes or complements through demand should be worked out.

4. The theoretical implications of the fact that product outputs may not be quantitatively varied with complete independence but rather within wide or narrow limits should be developed. One of the end cases, of course, is that of perfectly complementary jointness.

5. The theory should be extended, if it is to have value, beyond the two-product case. As it stands it is inadequate to the analysis of the more complicated manifestation of multiple production. This criticism may, of course, be directed toward many other employments of simple, two-dimensional indifference curves. In the case of a three-product situation the curves become indifference surfaces and alternatives lines may wander through a three-dimensional continuum. When more products are involved and the indifference relationships may be expressed as algebraic functions, the problem may yield to a nongeometric treatment, as in many other areas of applicability of the indifference concept. The difficulties of analysis and exposition should not hide the validity of the basic argument and of the emergent principles when reapplied to a situation of wider and more diversified production potentialities.

The entrepreneur with a given somewhat flexible plant may secure the same gross revenues through the production and sale of a wide variety of products in widely varying amounts. For each revenue there is a minimum cost combination or for each cost there is a maximum revenue. Within the field of choice thus narrowed there is one combination which, given his plant, will maximize the difference between revenue and cost. He may discover his one best policy through trial and error experimentation or by rational planning. He may merely be continually moving toward it. The various aspects of his problem are all symbolized by

[8] See Stigler, *op. cit.*, pp. 305–14.

features of our bi-product analysis. This is not to imply, however, that the expansion of this analysis to the "more than two product" case will be easy.

6. The theoretical construction as it stands does not take into account the strong probability that not all of the products of a multiple producer may be looked upon as "bread and butter" goods. There are apt to be certain items in any production list which are merely line completers, low profit leaders, or speculative new commodities still in the experimental or promotional stage of production and sale. The pricing of these does not ordinarily conform to the current profit maximization pattern assumed in this analysis.

7. Preliminary observation suggests that entrepreneurial innovation, new investment, and the development of new commodities, so significant in dynamic capitalism, has recently been largely a manifestation of multi-product firms extending their operations into new fields. This suggests that multiple production analysis is both a logical and necessary adjunct in market theory to cyclical and national income analysis in their wider aspects. It should be refined to serve this purpose.

8. It seems clear to a number of modern price theorists that many, possibly most, modern markets are oligopolistic, generally with some veiled or subtle type of collusive pricing to be found in them. Oligopoly and collusion among multi-product firms have implications, ramifications, and complexities which demand study and careful formulation.

The solution of the fifth of these problems may be expedited, though not made easy, because of the availability of the complicated analytical techniques already well worked out in connection with the other uses of indifference curves and isoquants. The first, second, third, fourth, and sixth demand considerable ingenuity. In the opinion of the present author, however, the seventh and eighth are the most significant and challenging of these subsidiary problems.

THE WORLD TRADE CHARTER AND THE GENEVA GENERAL AGREEMENT

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In recent months foreign commerce has been a focal point for negotiations among the world's leading trading nations. Some international agreements have resulted from these relationships. Of particular interest, because of the large number of countries represented in the discussions, are the Charter for an International Trade Organization and the General Agreement on Tariffs and Trade.

I

The representatives of 53 nations met at Havana, Cuba, from November 21, 1947, to March 24, 1948, and drew up the Charter for an International Trade Organization to be submitted to the governments represented.[1] The parties to the Charter pledged cooperation with one another and with the United Nations to promote action designed to assure the increased production and exchange of goods, to foster general economic development, and to facilitate consultation in the solution of problems related to international trade.[2]

The section of the Charter devoted to commercial policy included provisions pertaining to a large number of trading devices. The unconditional most-favored-nation clause, requiring members to grant to each other equal treatment with respect to customs duties, to import and export formalities, and to the international transfer of payments for imports and exports was incorporated. Preferential arrangements between certain designated territories listed in Annexes appended to the Charter could continue for the time being, but members were to enter into further discussions concerning the eventual elimination of preferences on a mutually advantageous basis.

Members agreed to negotiate for the reduction of tariff levels and other import and export charges, negotiations to be conducted on a product-by-product basis. Although a stated objective of the Charter was the general elimination of quantitative restrictions, such as quotas, import or export licenses, and related measures, numerous exceptions to this general rule were permitted. Any member could, to safeguard its balance of payments, restrict the quantity of merchandise imported in order to halt a serious decline in its monetary reserves. Such re-

[1] U. S. Department of State, *Havana Charter for an International Trade Organization and Final Act and Related Documents*. Publication 3117, Commercial Policy Series 113. Washington: Government Printing Office, April 1947.

[2] The Charter consisted of nine chapter, 106 articles, and several annexes. Chapter headings indicate the main topics: purpose and objectives, employment and economic activity, economic development and reconstruction, commercial policy, restrictive, business practices, intergovernmental commodity agreements, the international trade organization, settlement of differences, and general provisions.

strictions were, however, to be gradually relaxed and ultimately eliminated, and any member contemplating such action was to consult with the Organization.

It was recognized that the responsiblity for maintaining equilibrium in the balance of payments rested upon each member and that, in so far as possible, methods employed should be those which expanded rather than contracted trade. But, since the balance of payments of one member was so closely related to that of other members, the Charter stipulated that the Organization should promote consultations regarding balance of payments problems and should further action consistent with other provisions of the Charter when attempting to correct maladjustments.

Cooperation with the International Monetary Fund was provided for, the Organization consulting with the Fund on matters relating to foreign exchange, balance of payments, and monetary reserves. Any member of the Organization not a member of the Fund was either to become a member of the Fund or enter into a special exchange agreement with the Organization. This arrangement was made so that the Fund and the Organization might pursue a coordinated policy with respect to questions of foreign exchange and quantitative restrictions.

Because of the existence of state-controlled trading organizations in certain countries, the Charter contained some provisions pertaining to state trading and related matters. If a member maintained a state enterprise, the enterprise was to make its purchases and sales in the nondiscriminatory manner prescribed in the Charter for private traders, with due regard to such commercial considerations as price, quality, and marketability, and was to give the enterprises of member countries the opportunity to compete for purchases and sales.

Several special commercial provisions were included. Nothing in the Charter was to prevent contiguous countries from according advantages to facilitate frontier traffic, or to prevent members from forming a customs union or a free-trade area, provided such union or area did not raise barriers against trade with other members. If a member granted a subsidy which maintained or increased exports from or reduced imports into the member's territory, it was to notify the Organization, and, if requested to do so, to discuss the possibility of limiting the subsidy. Dumping was to be condemned if it threatened material injury to an established industry or materially retarded the establishment of a domestic industry.

The Organization could recommend measures for the simplification of customs formalities and the elimination of unnecessary requirements. Bases for determining value for customs purposes were to be stable and were to be publicized so that traders could estimate such value with reasonable certainty. Members recognized the need for limiting charges in connection with importation or exportation to the approximate cost of service, for reducing the diversity of such charges, and for standardizing procedures for determining value of products subject to customs duties.

Laws and judicial decisions pertaining to requirements on imports, exports, or the transfer of payments and agreements affecting international trade, were to be published promptly and copies thereof sent to the Organization. Members

were also to publish regularly and promptly statistics of external trade, of governmental revenue from taxes on goods crossing national boundaries, and, if possible, of subsidy payments. The Organization was to be a focal point for the collection and publication of such statistical information and to collaborate with other organizations in studying methods for improving procedures for the collection, analysis, and dissemination of economic statistics.

The Charter contained a so-called escape clause which provided for emergency action on imports of particular products. If, while discharging the obligations (including tariff concessions) assumed under the Charter, imports of any product into the member country increased to such an extent that serious injury to domestic industry threatened, the member was free to suspend its obligation or modify the concession. Each member was to give sympathetic consideration to representations made by other members with respect to the operation of provisions, and to consult with the members thereto.

The Organization was to consist of a Conference meeting in annual session, an Executive Board composed of 18 members selected by the Conference, and specialized Commissions, together with a Director-General and staff. The membership of the Organization was to consist of those states invited to the Havana Conference on Trade and Employment,[3] and any other states whose membership was approved by the Conference. Any member could withdraw three years after the Charter had entered into force, and nothing in the Charter was to keep a member from having economic relations with a nonmember. The Charter was subject to amendment, and could be terminated by agreement of three-fourths of the members.

II

Negotiations among the representatives of 23 countries for the reduction of tariffs and other barriers to trade were initiated at Geneva, Switzerland, April 10, 1947. The negotiating conference held over one thousand formal meetings, and continued discussions for six months. On October 30, 1947, a General Agreement on Tariffs and Trade was concluded.[4] The United States participated in the General Agreement under authority of the Reciprocal Trade Agreements Act.

The General Agreement was drawn up with the objectives of improving standards of living, insuring full employment and increased real income, and expanding production and trade. Methods to be used were reciprocal arrangements to reduce restrictions on trade and the elimination of discrimination in international trade. The General Agreement consisted of two main subdivisions, first, the General Clauses dealing with numerous factors relating to trade barriers, and second, the Schedules of Tariff Concessions.

[3] The Charter for an International Trade Organization was to enter into force 60 days after a majority of the governments signing the Final Act of the United Nations Conference on Trade and Employment had deposited instruments of acceptance with the Secretary-General of the United Nations. If the Charter had not entered into force by September 30, 1949, the governments which had deposited instruments of acceptance were to be invited to discuss the matter.

[4] United Nations, *General Agreement on Tariffs and Trade*. Vols. I–IV. Lake Success, New York, 1947. II. 10.

The General Clauses outlined rules for procedure in international commercial relations. The rules included extended to all the trade between the parties to the General Agreement, and not to the items in the schedules only. General most-favored-nation treatment, subject to designated exceptions, was provided for. Procedures in connection with devices and formalities other than the tariff, for example, quantitative restrictions, exchange arrangements, antidumping and countervailing duties, subsidies, marks-of-origin, valuation for customs purposes, and publication and administration of trade regulations were delineated. These provisions were included both to prevent tariff concessions granted in the General Agreement from being counteracted by the use of other techniques, and to impede the growth of nontariff barriers.

Each of the 20 Schedules of Tariff Concessions listed the products upon which concessions were offered by one participating party to the other participating parties. These concessions applied to products which accounted for about two-thirds of the import trade of the negotiating countries and for about one-half of total world imports. Concessions were offered in the form of the elimination of some duties, reductions in existing duties, bindings of duties at existing levels, and the binding of duty-free entry.

The negotiations for the concessions proceeded upon a product-by-product basis, a concession being initially granted following discussions with the country which was the chief supplier of the product. More than one hundred negotiations between individual pairs of countries took place before the formulation of the final schedules of tariff concessions. Each party to the General Agreement was entitled, however, to each concession in the schedules of other negotiating countries. In this way, countries could obtain concessions on products of interest to them, although they were not the chief supplier of such products. The concessions made by the negotiating countries affected a substantial proportion of United States exports to those countries and important United States export products.

The Agreement was to enter into force 30 days after instruments of acceptance had been deposited with the Secretary-General of the United Nations by governments accounting for 85 per cent of the external trade of the negotiating countries.[5] A government not party to the Agreement could accede to the Agreement on terms agreed upon between it and the contracting parties. Provision was made for amendments to the Agreement, and for withdrawal from the Agreement. The contracting parties also stipulated that, if the Charter for an International Trade Organization entered into force, certain portions of the General Agreement were to be superseded by the corresponding provisions of the Charter since, they stated, the objectives of the General Agreement could best be attained through the adoption of a Charter providing for an International Trade Organization.[6]

[5] Some of the negotiating countries (the United States included), by means of a Protocol of Provisional Application, undertook to apply the Agreement provisionally after January 1, 1948. Twenty-two of the 23 countries represented at the negotiations had signed the Protocol by June 30, 1948. The twenty-third country asked for an extension of the period during which it might sign.

[6] If any contracting party lodged an objection concerning such supersession, the others could confer to decide whether the provision of the Charter or the corresponding provision

III

Certain fundamental tenets underlay these two international instruments, the Charter for an International Trade Organization and the General Agreement for Tariffs and Trade. Opinions will differ as to what these are, and how effective agreements based upon them can be under present circumstances. To the present writer the following are some of these tenets.

1. These documents are posited upon the assumption that nations are interdependent and are likely to continue to be so. That is, that nations will not attempt to produce within their own territories everything they use, but rather that the world economy will remain one in which individuals in any one nation produce only a part of the goods they consume and buy the rest from people in other nations.

Through the exchange of the specialties of one nation for those of other nations, a greater quantity and variety of goods can be available for consumers than if goods were produced by drawing upon resources not well adapted for making them. According to economic doctrine, output per unit of input is highest when those goods and services are produced in which the greatest comparative advantage in production is found or the least comparative disadvantage. If self-sufficiency is not the goal, facilities can be concentrated upon turning out those goods and services for the production of which the nation's human and natural resources are best suited. Hence output in terms of physical units of product can be maximized.

2. Since importers and exporters transact exchanges to obtain many essential goods and services, international trade is an integral part of economic activity. Trade can flourish when general economic conditions are propitious and declines when they are not. Thus the phases of the business cycle, the volume of trade, and the level of gainful employment are closely connected.

These documents are applicable under comparatively stable political conditions. Specialization is likely to be undertaken more extensively if nations are at peace. When there is political uncertainty, nations foster industries essential to the national defense and are more concerned with self-sufficiency in selected products than with the encouragement of trade. In times of national emergency, specialization and the international division of labor may be relegated to a secondary position.

3. International trade has been hampered by the restrictions on goods crossing national boundaries. These restrictions have appeared in many forms, each nation selecting the devices it applies and the stringency of the measures used. Among the barriers employed have been high import or export duties, limitations

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of the General Agreement should apply. At the First Session of the Contracting Parties to the General Agreement in Havana from February 28 to March 24, 1948, a few modifications in the General Agreement were made. A Second Session was held at Geneva from August 16 to September 14; it was agreed that, because of problems facing a few contracting parties, certain tariff concessions granted by them should be the subject of renegotiations, and that negotiations for bringing additional countries into the General Agreement should begin at Geneva on April 11, 1949.

on the amount or value of goods permitted to enter or leave a country during a designated time period, control of the foreign exchanges, and complex requirements for marking goods and clearing them through the customs.

The Charter and the General Agreement are based upon the assumption that if the growth of barriers to trade is retarded and the barriers in existence are reduced, the amount of trade can be increased. But, because of the many abnormal situations following the World War II hostilities, and the apparent necessity for flexible national adjustment to unforeseen circumstances, numerous exceptions to the ultimate reduction of barriers are permitted for an interim period.

4. The method suggested for modifying restrictions on international trade is the procedure of negotiation rather than unilateral action. By unilateral action one nation changes its barriers, but it is not thereby assured that other nations will change theirs. Through a bargaining procedure, however, one nation may offer to modify its barriers only if another makes comparable alterations.

Bargaining is made very specific through the use of the product-by-product negotiations suggested. A concession on one commodity can be traded for a concession on another commodity. If the chief supplier principle is adhered to, a concession on a particular major import item is granted only at the insistence of the nation which is the principal source of supply for that product. Since the concession is of more practical value to the chief supplier than to other trading nations, the chief supplier should be willing to grant a more significant concession in return than would any other country. Thus, bargaining power is conserved and utilized effectively for obtaining as many significant concessions as possible.

5. Nondiscrimination in trading relationships is another objective of the Charter and the General Agreement. This course of action is designated in the most-favored-nation clause, unconditional form. The clause provides that any favor granted by a contracting party to another nation must be immediately extended to all contracting parties. This makes for multilateral trading wherein one nation buys from and sells to many other nations without partiality.

To be contrasted with multilateralism is bilateralism. In bilateral trading two nations pursue exclusive relationships, and favors granted each other are not extended to third parties. Although a bilateral procedure is used under the Charter and the General Agreement in negotiating a concession, once the concession is granted, it is generalized multilaterally to all contracting parties. This is based on the assumption that, in the long run, multilateralism leads to an increase in the volume of trade. Certain existing preferences are permitted for the short run, with the anticipation that future negotiations may help to eliminate them.

6. These documents encourage buying and selling between nations upon the basis of competitive principles, that is, sellers are to strive against each other in making a sale, and buyers are to bid against each other in making a purchase, the sellers being zealous of disposing of goods in the dearest market available, and the buyers of acquiring goods in the cheapest market, due consideration being given to quality, marketability, and related factors. If a contracting party institutes or fosters a state enterprise, such enterprise is to be governed by these same principles in making purchases and sales.

In some areas of the world the state control of functions performed a few decades ago by private individuals has grown; one of these functions is that of importing and exporting. In these documents it is suggested that the state enterprise fit into the world trading pattern by responding to a given commercial siatuation as a private trader would react under similar circumstances. Trade is to be transacted according to the competitive rules of conduct.

7. It is recognized in these documents that trade is only one of a nation's international transactions and is closely related to the others. In a nation's balance of payments a list of incoming payments appears on one side of the balance sheet, and a list of outgoing payments on the other side. In addition to receipts for merchandise exports and payments for merchandise imports, there are, for example, incoming and outgoing payments for shipping services, tourist expenditures, external investments, and gold and silver movements listed in the balance sheet.

Evidence of an understanding of the connection between trade and service transactions on the one hand, and domestic and international monetary activities on the other hand, is found in many parts of the Charter and the General Agreement. For instance, any contracting party can use quantitative restrictions on imports to halt a serious decline in monetary reserves, and thereby attempt to safeguard its balance of payments position. Consultations among members regarding balance of payments problems are to be encouraged. And the International Monetary Fund is to be consulted on matters pertaining to balance of payments and foreign exchange.

8. The representatives framing the Charter and the General Agreement evidently believed that dissemination of information concerning trade establishes a healthful atmosphere for fostering commerce. They provided that statistics of exports, imports, and governmental revenue from import and export duties and from other taxes on goods in international trade were to be published as promptly as possible. In addition, means were to be studied to improve methods for collecting and analyzing statistics. This might even involve the adoption of standard tariff and commodity classifications by the participating parties and the refinement of terms and nomenclatures used in international trade.

Laws and judicial decisions and international agreements affecting commerce were also to be made public as soon as possible. Thereby the trader could become acquainted with the regulations in force pertaining to the purchase and sale of goods. In general, there was to be no secrecy concerning the facts of past trade or the regulations upon current transactions, unless such information had to be kept confidential for national security reasons.

9. Throughout these documents, sympathetic consideration by the participating parties of grievances raised by another party was suggested, and consultation upon troublesome questions encouraged. Representations made by any participating party with respect to the operation of customs formalities, antidumping duties, subsidies, quantitative restrictions, exchange or transit regulations, and state trading, for example, were to be accorded due consideration by others.

If a negotiating party intended to place restrictions on imports, it was to give

advance notice in writing to parties with a substantial interest in supplying the product, so that there would be adequate opportunity to consult on the matter. Any party contemplating the institution of restrictions to safeguard its balance of payments was to consult with the contracting parties concerning alternative corrective measures and possible effects upon other contracting parties. Apparently it was assumed that if each party had a chance to hear the other's point of view, some kind of compromise was more likely to result than if no direct discussion of the matter were held. In this way, a basis for understanding could possibly be found and minor grievances prevented from growing into major ones.

10. The Charter and the General Agreement provided that if, following the adoption of the agreed obligations and as a result of unforeseen circumstances, imports of the concession product should increase to such an extent that serious injury to domestic producers of competitive products threatened, the contracting party could suspend the obligation or withdraw or modify the concession. An escape clause sanctions emergency action on imports of particular products and allows for elasticity in the fulfillment of responsibilities assumed.

Conditions in the world economy are so interrelated and unpredictable that no group of negotiators could be expected to envision all the possible repercussions of provisions. Consequently, in some articles of the documents, withdrawal from particular obligations under certain designated circumstances was arranged for, modification of concessions subject to consultation permitted, and amendments authorized. Finally, permanent withdrawal from the agreements on the part of any contracting party was incorporated as a measure of last resort if satisfactory modification of obligations could not be attained.

IV

International negotiators do not always reach sufficient accord to issue tangible instruments at the conclusion of their meetings. But, in spite of differing attitudes in many sections, assemblages representing leading trading nations met for extended discussions, debated the problems related to world commerce, and issued the Charter for an International Trade Organization and the General Agreement on Tariffs and Trade. This was significant action.

The coverage of topics in these agreements is noteworthy. The actual problems besetting world trade were faced. Some critics may question specific provisions included for dealing with the problems, but should concede that most of the outstanding difficulties—barriers to international trade, disequilibrium in the balance of payments, and the relationship between private enterprise and state trading organizations, for example—were considered. Some subjects, such as the dissemination of information, the standardization of commodity classifications, and the extension of sympathetic consideration of grievances, were given new emphasis.

International trade has been impeded for centuries by barriers to the movement of goods. In recent years the variety and comprehensiveness of such restrictions have multiplied. A realization of the broad scope of these restrictions and the relationship of the devices used by one nation to those adopted by others

are indicated in the Charter and the General Agreement by the provisions for modification of such barriers through the procedure of negotiations.

It must be noted, however, that since all nations are not in the same stage of industrial development, a suggestion to modify trade barriers does not appear to each in the same light. The reduction of restrictions on trade, permitting the low-cost goods of an advanced industrial area to pass more easily into a less advanced area, may be opposed by a nation with new industries, whereas a nation with highly mechanized, large-scale plants, in no fear of competition from abroad, may seek lowered duties to enable its goods to enter foreign markets readily. This difference in point of view was clearly indicated in conference discussions.

The inclusion of the most-favored-nation clause, unconditional form, represents only a nominal victory for the exponents of multilateralism. The exceptions permitted to most-favored-nation treatment are so numerous that the application of such treatment may be seriously restricted. But, even though complete nondiscrimination was not provided for, at least the concept of equality of treatment was not abandoned. This is important in an environment where preferences are prevalent. How firmly entrenched these preferential arrangements are will be shown by the alacrity or slowness revealed in initiating any further negotiations to eliminate preferences, and the outcome of such negotiations.

The emphasis placed upon consideration of the balance of payments position of a nation in sanctioning exceptions, at times of duress, to certain rules of commercial conduct established in these agreements is commendable. Too frequently trade has been looked upon as an isolated phenomenon, and the connection between the merchandise items and the other items in the balance of payments not recognized. If, however, nations are permitted to institute trade restrictions because of imbalance in their international transactions, they must exercise due restraint and not take advantage of the wide latitude granted. This exceptional action should not be a substitute for a correction of the basic maladjustment causing the balance of payments difficulty.

Arrangements for the publication of trade statistics and of the laws, regulations, and decisions pertaining to trade are significant. Elimination of secrecy except on matters concerning national security removes one cause of misunderstanding among nations. Also, since a paucity of facts frequently leads to uncertainty and hesitation, full publicity concerning world trade should enable an informed exporter or importer to cope more effectively with new situations and hence increase commerce. The encouragement of standard tariff classifications is fitting. Many times in the past this step has been urged. Changes leading to more concise procedures for collecting data could make for greater comparability of international statistics and increased usability of material distributed.

A plea for sympathetic consideration of grievances is pertinent. If each nation, when applying new measures related to trade, considered the effects of its action upon others, mutual goodwill might be increased. When one country modifies its position, even slightly, in order to advance adjustments elsewhere, expecting

reciprocal action in return, the common interest may be furthered. To what extent nations will cooperate is not clear. Sometimes a policy of immediate gain is pursued while more far-reaching advantages are seemingly lost from view.

The absence of several Eastern European countries from the negotiations, even though these countries have not accounted for a large share of world trade, raises the question of trading relationships between areas where international trade is a function of the government and areas where international trade is a private enterprise. Whether adequate standards can be established for activity delineated in the provisions pertaining to state trade remains to be seen. Contact between free economies and controlled economies is a growing problem.

The inclusion of so-called escape clauses is expedient. Escape clauses and exceptions to general clauses permit adjustment to new and unusual circumstances, and yet make for operation within a rather clearly demarked framework. Such provisions may well be a decisive factor in a nation's acceptance or rejection of an international agreement. Sovereign states hesitate to assume definitive commitments.

The number of exceptions permitted to the rules of conduct outlined in the agreements, however, is one point at issue between those critics that believe these instruments are satisfactory embodiments of the principles involved and those that contend they are not. The inclusion of too many exceptions could tend to nullify the provisions to which they are appended. If resort to clauses permitting exceptional action were frequent, any element of stability created might be removed and the attainment of long-run objectives seriously hampered. Whether the agreements are weakened in operation by these arrangements depends upon the discretion with which they are used.

Adequate rules for world commercial relationships, firm enough to promise a degree of predictability in trading matters, yet sufficiently flexible to meet the requirements of everchanging conditions, cannot be drawn up in a brief period of time. Such regulations are rather the product of extensive testing and modification. They must evolve slowly as the result of seasoned experience, with any consistent development contingent upon conditions of comparative international security. The World Trade Charter and the Geneva General Agreement may, however, offer a foundation for the formulation of a code for international trading activity.

BOOK REVIEWS

Education for an Industrial Age. By A. Kähler and E. Hamburger. Ithaca, N.Y.: Cornell University Press, 1948. Pp. xv, 334. $3.75.

This is a very important book. The authors study the history of vocational education (or the lack of it) in this country, present essential developments abroad, and suggest reforms. They want more vocational education; they also want it integrated with general education.

They are not impressed by the undemocratic German system which divides children at an early age into those who are to be the educational elite and those who are to be the laborers. Our authors prefer to leave the gates open to all but also in the meanwhile to provide adequate doses of vocational education. The importance of vocational education stems in part from the contribution which education must make for living both a good and a full life; and the breakdown of the apprentice system, as Mr. Kähler and Mr. Hamburger show, intensifies the need for a vocational program.

In reading this book, one cannot help but be impressed by what a hit-and-miss affair our educational system is. It is very difficult to find out what we are trying to do; and the parents sending their children to school and college are quite confused. Many educators in recent years have stressed the importance of a general education and have poked fun at the miscellany of courses available to students in the schools. Yet even the most vigorous defenders of general education admit that the preparation for the good life cannot be dissociated from the preparation for a productive life. Perhaps the main difference between the authors and the supporters of general education is one of degree. They both want vocational training and general education.

Irrespective of what the colleges and even the schools prefer to offer, the parents make it clear that they seek education predominately as a means of improving their children's material position. (This was made eminently clear in a *Fortune* survey of September 1949.)

This book suggests to the reviewer the need of frequent inquiries concerning the objectives of education and the supply and demand situation. In another generation, we shall have from 10–15 million college graduates and with about 75 per cent of our population graduating from secondary school we are heading towards an educational achievement for the population of about 11–12 years of schooling. The pressure of vast output of high school graduates has already been felt in the depression of pay in white collar jobs; and though in the past a college education has paid in dollars and cents, there are already signs of saturation and of reduced economic rewards for higher education. What will the situation be when, following current trends, one-third of our adult population (about 35 million) will be college graduates and one-half (about 50 million) will be junior college graduates or its equivalent? It is then understandable why Messrs. Kähler and Hamburger have written on vocational education and why the President's Commission has urged higher education for other purposes than

training of verbal aptitudes. Surely one answer to our problem is a greater consideration of vocational aspects of education. Another is to sell the public, more effectively than has been done so far, the noneconomic contributions of education. For taking this bold step of emphasizing the need of more vocational education in the schools in a period when the fashion among educators at any rate is perhaps to overemphasize nonvocational aspects of education, the authors deserve the thanks of all.

Harvard University SEYMOUR E. HARRIS

Economic Planning. By Seymour E. Harris. New York: Alfred A. Knopf, 1949. Pp. xvii, 577. Text $4.50, trade $6.00.

Professor Harris scores again. Writing under the title, *Economic Planning*, he has brought together the "plans" of 14 countries. The major purpose of the book is to inform Americans about the objectives and methods of planning as practiced in these countries. This is desirable, according to Harris, since, "even in a peaceful world the survival of a capitalist society, an island in a socialist sea, is not probable" and ". . . from an awareness that planning is on the march. . . ."

The author has taken the liberty to include in this book on planning almost everything ranging from the economic reports of the President of the United States to the Stalin Five Year Plan in the USSR. In addition, the official plans and reports of the following countries are included: Poland, Czechoslovakia, Hungary, Greece, Argentina, Japan, Norway, United Kingdom, India, Germany, and the Netherlands. These plans are presented in abridged form as Part II and constitute the major portion of the book.

Most of the plans have as their objective an ultimate increase in the standard of living. To accomplish this, large increases in saving and investment are necessary. For example, France expects to use from 23 to 25 per cent of its national income for maintenance and capital investment. Poland would utilize 20 per cent of its national income for investment purposes. Estimates for other countries would range up to an ambitious 30 per cent as compared with a level of about 15 per cent in the United States.

Economic necessity has been the mother of most of the plans. England and France particularly seek, through planning, to regain their positions in international trade. Countries within the Russian sphere have adopted economic planning as a means toward the development of socialized economies. In these satellite countries, there is a tendency to follow the Russian pattern with some modifications, particularly in regard to agriculture.

Nationalization of the basic industries has played an important part in many of the plans. In addition to nationalization, monetary and fiscal policies are important levers to be used in carrying out desired objectives. India would finance its plan, in part, by "creating money." France "as a last resort" would take recourse to borrowing from the banks. And the Netherlands would supplement voluntary saving "by compulsion if need be." All the plans seem to recognize that increased capital investment is not an end in itself and that productivity must be increased if any real gains are to be made. As the author suggests,

the plans for the most part ignore long-run population-resource ratios, "the Malthusian specter," while the Argentine even "plans" to foster population growth.

Since the bulk of the book consists of quotations from the original plans, the author's contribution consists mainly of the first eight chapters and a final chapter. In the first eight chapters (97 pages), the author attempts to cover a wide range of topics such as business cycles, employment, productivity, industrialization, finance, foreign borrowing, etc. Under these headings, he attempts to analyze the situation as it existed in most of the countries for which he has presented plans. The reviewer found this section, Part I, somewhat confusing and difficult to follow. This was particularly true because applied economic data must necessarily rely on extensive statistical treatment. A clearer picture might have been obtained if each country had been dealt with separately and more extensively, leaving a comparative summary for the end.

Since most of the plans were drawn in 1946 and 1947, there has been some time in which to evaluate their accuracy. In general, they were too optimistic. Investment budgets were too high and inflationary pressures too strong. This has been due in part to the unstable political situation and to the magnitude of the tasks at hand.

University of Kentucky JOHN T. MASTEN

Wealth and Welfare: The Backgrounds of American Economics. By Norman Ware. New York: William Sloane Associates, 1949. Pp. 231. $1.90.

Norman Ware has been a newspaperman and a professor of economics. He brings to this book an abundance of the rare ability to write serious English in a readable style and a deficiency of the equally rare ability to see history whole. Perhaps he possesses the latter ability as well; maybe he did not bite off more than he could chew but he certainly quit chewing several thousand pages too soon.

He has stated here one sweeping oversimplification after another. Random item: "Smith and Veblen were in many respects alike. Both came from the hinterlands, Smith from Scotland and Veblen from Minnesota, and both, possessing great intellects, were to the end countrymen turned philosopher" (sic). Item: The economists of the nineteenth century "recorded as well as they could how the businessman operated and, though the businessman was always away ahead of them, they seemed to think that this was enough."

Henry Clay and Matthew Carey are Ware's knights in shining armor, cutting down with lance and broadsword the false doctrines of Ricardo, Mill, Smith, and, by anticipation, Keynes. Through some mystic catalyst which, like the critical mass of an atomic pile, is forever left unexplained, these two men developed the "American System" which the New Deal altered into the "New American System" and which, Ware assures us, is just what we need to maintain freedom and prosperity. This is, he tells us, "a joint farmer, enterpriser, labor alliance." For those who find that picture unclear he spells it out in a whole paragraph as being a "different mixture" of mercantilism, physiocracy, and free enterprise.

Ware's method of explaining why historical figures held certain economic opinions is in the tradition of the Beards—but with all the 1950 attachments. Thus, to explain Thomas Jefferson, Ware found it necessary to read Freud—or at least Kinsey. Hence, we are told that Jefferson "was not greatly excited in his youth by the one girl who turned him down. He was not desperately in love with the widow he married"; and, indeed, that "if Jefferson ever loved any woman greatly it was his mother."

Ware can turn a sentence—would that more economists could. But he neglects to observe the admonition of the old Russian proverb: "Do not sacrifice your father for a wisecrack." As a result, what ideas there are in this book are frequently overplayed for the sake of the telling phrase.

Emory University BUFORD BRANDIS

L'État et la prospérité sociale: nouveaux principes de finances publiques. By Angelos Angelopoulos. Paris: Librairie Generale de Droit et de Jurisprudence. R. Pichon and R. Durand-Auzias, 1949. Pp. 200. F. 400.

In this stimulating book we are told that "the general objective of the new state is social prosperity." To this end three subsidiary objectives must be achieved, namely: (1) satisfaction of social wants, (2) rational administration of national resources both material and human to achieve full employment, and (3) achievement of greater productivity and a general lifting of the standard of living through a redistribution of the national income.

It is very hard to take issue with such laudable objectives as "full employment" and the "lifting of the standard of living," which form the central and urgent theme of this work. In fact most economic systems and ideologies promise these things. However, the idea that the state must assume all the residual responsibility for their achievement is more difficult to accept.

On the theoretical plane the author acknowledges primary kinship to the Keynesians. But on the plane of policy prescription he appears to be an eager socialist and planner. There is no evident conviction in this book that we are possibly in the midst of two revolutions rather than one—one leading us closer to collectivist controls, the other leading us to the fulfillment of the uncompleted market system. The assumption is, apparently, that the market system has been proved once and for all so completely bankrupt that at this late date it need be given no hearing in its claim to fulfillment.

Thus on page 170 we read, "The various competing needs for consumption goods and investment goods ought to be rated in terms of priority according to social criteria. Only the state can establish this classification by means of a well prepared plan." One is left in doubt, however, of the exact calculus by which such a hierarchy of values is to be determined, although it would appear to be the very keystone in the arch of "social prosperity."

The "right to work," which is urged as the reverse face of the state's obligation to assure "full employment," leaves the question as to how the economic plan is to assure not only that every pair of hands is occupied but with the best available combination of tools and skills. Is it enough to say as on pages 163 and 164 that: "the state, to administer national resources rationally must

resort to planning which, alone, permits classification of wants to be satisfied, on the basis of social priorities"?

The argument leads inexorably from national economic planning to the logical sequel of international coordination of national plans. The author would give this job to the United Nations Economic and Social Council, "whose role ought to be to establish economic policy directives rather than to occupy itself with economic and social questions of secondary importance," except that this implies a considerably stronger United Nations organization. He views with satisfaction the establishment and publication (even though on a nonlegal basis, as in the United States) of national economic budgets and recognizes in this device a convenient midway step between the routine administrative budget of the liberal state and the full-fledged economic plan having a legal or compulsory status. Although a priori it would seem possible to make a case for the use of this new tool in order to reduce the role of the state as well as to increase it, it appears that Mr. Angelopoulos is not looking in that direction.

University of North Carolina LOWELL D. ASHBY

Toward Social Economy. By Howard R. Bowen. New York: Rinehart & Co., 1948. Pp. x, 326. $3.00.

Dean Bowen of the College of Commerce and Business Administration of the University of Illinois regards this slim volume as "the nucleus of a reasonably complete and rigorous course in economic theory." Here is welfare economics, institutional economics, neoclassical economics, Keynesian economics and egalitarian Abba Lerner economics all put together in a neat package. Though this reviewer thoroughly disagrees with the policy implications of the book he cannot praise too highly the clarity of the exposition.

He would feel happier if Professor Bowen had started with the passage which he will quote presently. It comes at the very end, after 325 pages devoted to building up the case against private capitalism. The system, he tells us, cannot maximize aggregate satisfaction, i.e., ". . . the sum total of the amounts of satisfaction enjoyed by all the members of the group taken together" (p. 123) and hence cannot realize the single most important end which we have a right to expect of an economy. This failure is due in part to deficiencies in the pricing mechanism and in part to the fact that the system fails to breed the ethical attitudes necessary to its survival.

The principal shortcomings of the pricing mechanism are: (1) that it distributes rewards to factor owners in a way that violates the principle of equal marginal satisfactions (which is simply a disarming way of saying that the national income is not distributed equally); (2) that the demand for "social goods" (like health, education, national defense, smoke control, stream pollution, etc., etc.) and for goods produced by decreasing cost industries do not get adequately registered; and (3) that it cannot generate high and steady employment.

These shortcomings can only be corrected by a radical redistribution of incomes and by a considerable expansion of production of social goods and the goods of the decreasing cost industries. It might be supposed that after

the equalization of income the price mechanism would be capable of maximizing aggregate satisfactions, but this is not so. Consumer choice itself, being culturally determined, does not lead to the "right" decisions. Nor can the citizens as voters be trusted to decide just how much of various "social goods" and goods of the decreasing cost industries "should" be produced by the state. Elaborate devices are needed to correct their decisions. A great deal of subtlety plus a dangerous disregard for political realities are displayed in the development of these correctional devices.

After all this, and just four and one-half pages from the end of the book, comes the passage to which reference was made at the beginning of this review. In a discussion of the alternatives to capitalism he warns his readers that after all capitalism has a number of undeniable virtues:

> For example, capitalism provides highly effective motivation for individuals. It spurs them on to great personal effort in providing the goods needed by society. Also it encourages experimentation, innovation, new ideas, and new ways of doing things. Moreover, it provides a fascinating and varied "game" in the form of a competitive race for fame, fortune, and economic power which anyone with the wit, the courage, and the stamina can enter. Finally, capitalism is one type of economic system which has *demonstrated* that it is compatible with free political institutions. That any other system is compatible with or conducive to political freedom is a theory and not a demonstrated fact.

If this statement is true—and this reviewer thinks it is—then it seems to follow that the maximization of aggregate satisfactions is not the proper end to emphasize in our quest for The Good Society. On the contrary, the strengthening of the threatened foundations of human liberty is the greatest single goal for our times. Professor Bowen hinted at this when he observed in a footnote (p. 123) that the attainment of his proposed end "may be deliberately sacrificed in the interests of 'higher goals' such as the extension of human liberty and the development of human personality." The present reviewer suspects that events are forcing the author to this conclusion and that when he has frankly redefined his ends he will want to revise his analysis quite drastically. This reviewer looks forward eagerly to this revision for he knows of no one who does a better job of exposition.

Wabash College JOHN V. VAN SICKLE

British War Economy. By W. K. Hancock and M. M. Gowing. London: H. M. Stationery Office; New York: British Information Services, 1949. History of the Second World War, United Kingdom Civil Series, edited by W. K. Hancock [Vol. I]. Pp. xviii, 555. $5.50.

In the midst of Britain's struggle for survival, the War Cabinet decided in 1942 to appoint a small team of research historians and economists to prepare detailed economic and social studies for confidential use during the war and for general publication afterwards. The team was given free access to all documents and to the war agencies concerned. The present volume is the first in the forthcoming "Civil Series" of Britain's official war history, an enterprise semiofficially described as being without precedent.

As many as 30 volumes may eventually be published. At the moment, 20 volumes are under way. Ten will be general monographs on broad economic and social subjects, seven will deal with war production, and three are introductory. Of the latter, "British War Economy" is the first, to be supplemented later by a survey of social policies and a statistical digest of the war.

British War Economy sets the framework for the monographs still to be published. It provides a nontechnical, authoritative, concise history of Britain's economic war effort, leaving the social problems to a companion volume. Rather than adopt an organization by economic subjects, the authors follow the chronological principle and divide the war period into four stages of prime strategic significance: the period of Anglo-French alliance, Dunkirk to Pearl Harbor, Pearl Harbor to Normandy, and "after Normandy." The treatment is strictly historical, integrating the economic factors with the strategic and administrative ones. Broad light falls upon the motivations and noneconomic factors behind economic decisions, and administrative problems receive an intimate treatment that would have been impossible without the closest contact between researchers and war agencies. That contact was maintained on the highest policy-making levels throughout the vast economic war machinery, and the story is therefore told from the vantage point (though not necessarily the viewpoint) of the central agencies. Economic analysts may miss the theoretical approach; but they will learn a great deal about the *caeteris paribus* in the case.

Though an official history, the book is fresh, vivid, and remarkably unfettered. Writing in a scholarly yet altogether unpedantic manner, the authors have steered clear of both the colorless White Paper style and the more lurid Ministry of Information approach. They have quite liberally used their freedom of research and expression; while handling ticklish diplomatic and political problems with great care and reticence, they have wisely decided to be quite frank in what they say if it was possible to say something at all. This is particularly noticeable in their account of Britain's economic war relations with her allies including Russia. In the relevant chapters, much material will be found that should prove as valuable a corrective of erroneous ideas as was Keynes' discussion of similar problems after the first world war.

It is far too early to write a definitive history of the last war, and even with all the freedom granted and used, an official history must be subject to the inevitable limitations imposed by public and political responsibility. But *British War Economy* will remain a primary source of major importance even where future research should complement or correct it. From the book, the picture of Britain's war mobilization emerges as a thoroughly dynamic one, a story of decisions and crucial choices made under extreme stress, often in the absence of sufficient factual information. The authors do not try to "prove" anything, not even the magnitude of the British effort. They rather show the interaction of necessity and choice with the concomitant emergence of new conditions, techniques, and policies—often irreversible—as the nation rapidly moved on from emergency to emergency. In this realistic, dynamic approach lies the book's

chief contribution towards a deeper understanding of the road Britain has taken since the war.

University of Georgia GREGOR SEBBA

A Dictionary of Economics. By Harold S. Sloan and Arnold J. Zurcher. New York: Barnes & Noble, 1949. Pp. viii, 268. $3.00.

Unlike the natural sciences, economics has not reached—and possibly never will reach—the state of a fixed system of symbols. However, despite this, every science must have its special vocabulary or terminology. Sciences deal with ideas, thoughts, and concepts, and must be expressed in words. The authors of this dictionary have included more than 2400 vocabulary entries to enable anyone who will peruse its pages to become better acquainted with the language of economics.

This work is not a cyclopedia of facts except as these facts help to explain the meaning and bearing of the terms defined. A dictionary's chief function is to define words as simply as possible. Examination of this volume reveals that this simplicity is frequently carried to extremes.

Moreover, the shortening of some definitions through the use of other technical terms necessitates reference to several definitions unless the user has some knowledge of the meaning of the allied terms. This limits the usefulness of the volume as a ready-reference tool for the layman.

Others might quarrel with the omissions in the glossary. Stress is laid upon modernity and this has been maintained for the most part, but the volume is by no means as comprehensive or definite as it might be. Many terms now in common usage have been omitted. To mention only a few, words or phrases like absenteeism, abstinence theory, econometrics, indifference curves, and "produit net" are missing.

To call attention to these limitations is not to condemn the volume. Faults of omission and commission are in this case largely matters of differences of opinion among economists. No doubt, some will find fault with some of the definitions. Let us not forget, however, that there is extreme difficulty in finding a good technical meaning upon which all economists agree for many of the terms in common economic use.

Basically, the authors of this volume have wrought well. The dictionary contains reasonably lucid definitions of those terms which cover the economic facts of life. The style is concise, condensed, clear, and fairly comprehensive. Both working and technical definitions are given where there is a wide difference between the two.

Moreover, the glossary fullfils the purpose of a dictionary. The function of such a work is to record actual (or historic) usage. This has been done in this volume, and, in a few cases, the authors have found it advisable to suggest slight amendments, either because a term has been misused, or because some modifications would do away with present ambiguity or confusion.

If the purpose of a good definition is to give the uninformed person a clear

and adequate notion of the character of the term or concept, even though he may never encounter it in his experience, or if its purpose should be to enable a person correctly to identify the term or concept the first time he does meet it in his experience, then the authors of this dictionary have skillfully handled their materials. The book will repay the close attention of anyone interested in a general glossary of the basic words and topic phrases ordinarily used in economics.

George Peabody College for Teachers JAMES E. WARD

Marketing and Distribution Research. By Lyndon O. Brown. New York: Ronald Press Co., 1949. Pp. viii, 612. $5.00.

This is a revision of the first edition (1937) published under the title of *Market Research and Analysis*. The new book has a larger page size and much additional text particularly in the treatment of specialized applications of market research. The former chapters on methods have been rewritten to include the description of new techniques, the substitution of current terminology, and some more recent illustrative material.

The excellent chapter on "Scientific Method" has been retained and the formerly closing chapters on "Quantitative Market Analysis" and "The Role of Market Analysis in Business and Economics" have been given more appropriate positions toward the front of the book. There is no longer a list of suggested readings but reference footnotes are much more liberally used.

The querulous critic will wonder why the dedicatory quotation from Talleyrand has been dropped. Does the author no longer respect the sentiment that "There is one person wiser than Anybody and that is Everybody"? The distinction formerly drawn between market research and market analysis has disappeared and the new chapter entitled "Opinion and Public Relations Research" ignores last year's tempest over political polls and the impact of their shortcomings upon the prestige of the market research profession.

The first edition was a very good classroom text and the revision should prove to be a better one. It appears to the reviewer that greater concessions have been made to the interests of business and technical users but without loss in its appeal to teachers and students or in its value to the general business executive wanting an understandable yet thorough treatment of the subject.

University of North Carolina C. S. LOGSDON

Statistical Techniques in Market Research. By Robert Ferber. New York: McGraw-Hill Book Co., 1949. Pp. 542. $6.00.

The powerful statistical techniques which have been developed by the mathematicians have important applications in the field of market analysis. Despite this fact, the market analysts have made very little use of these techniques until the present time. The application of statistical techniques to market analysis has been retarded by two factors: (a) The nonexistence of a book which provides for the layman a simple explanation of these techniques. Such a book is needed because no one except the trained mathematician can understand the

explanations which are set forth in the technical articles published in the professional journals. (b) The nonexistence of a book which explains how these techniques may be applied in the field of market analysis.

Ferber's book fills both gaps with its nontechnical account of modern statistical methods, and its illustrations of their applications to market analysis. His book differs from other statistics books in two major respects: (a) it puts emphasis on statistical techniques which are useful in connection with market analysis, and (b) it makes a sharp distinction between population measures and associated sample measures.

His material is presented in two major sections, a text and an appendix. The major topics covered by the text are: elementary statistical concepts, sampling theory, applications of sampling theory, and multivariate and correlation methods. The author has compressed into the appendix a great deal of material. Derivations of mathematical formulas are provided. A technical discussion of statistical procedures is included. He has supplied a bibliography of statistical literature and a table of mathematical formulas with a statement of each formula's purpose and general applicability. Several mathematical tables which are required as aids to statistical work also are included in the appendix.

The book's thorough coverage of a complex and technical subject is commendable. So is its stimulation of the market analyst to make use of new research tools, such as the testing of hypotheses and sequential analysis. The book's physical features also are commendable.

The book has some obvious weaknesses. Its wordy style obscures some of the author's ideas and confuses the reader. Its long and complex sentences might be acceptable to the academic but not to the business man. The applications of statistical techniques in practical situations are not thoroughly illustrated. Mathematical formulas are not always translated into clear English. Furthermore, the book provides no problems to be worked out.

The comprehension of this book's contents can be achieved with a three-dimensional maturity, one which is practical, mathematical, and statistical. The book's depth is too great for undergraduate students but is suitable for graduate students of marketing who are receptive to mathematical subjects. The book endeavors to bridge the wide gap between theory and practice, and does this fairly well.

Ferber's book fills a vital need despite its shortcomings. The professional market analyst could not make a better addition to his reference library.

Washington, D. C. PAUL H. ANDERSON

A Regional Economic Geography. By Samuel Newton Dicken. Boston: D. C. Heath & Co., 1949. Pp. ix, 516. $5.50.

Professor Dicken has achieved his aim "to produce a text which emphasizes the geographic aspects of production rather than the purely economic, to write it in such a form that previous training in college geography on the part of the student will not be necessary."

Following introductory chapters on our new world, types of production, and

the background of production in North America, this book involves a regional study of commercial fishing, forest production, grazing, commercial agriculture, subsistence agriculture, mining, and manufacturing, with three concluding chapters on world trade. The appendix includes classifications of climate and soil, a list of 440 review questions, and selected references and a film list arranged by chapters.

Production regions are studied in successive groups of chapters. Discussion proceeds from the simple to the complex and usually begins at home. Fisheries of the Americas receive initial attention, beginning with New England. Twenty-seven chapters are devoted to fishing, forest, grazing, and agricultural regions, and the mineral and industrial development of each region is indicated briefly. A chapter on American and European coalfields is wedged between dairy regions and corn belts. Another on petroleum and natural gas in the United States lies between the American cotton belt and plantations and subsistence agriculture in Middle Africa. A timely chapter on strategic materials precedes the discussion of manufacturing. Regional analysis vanishes in the concluding chapters on trade centers and trade routes of the continents, overseas routes being ignored.

While geographers may wince at the American corn belt spreading eastward to the shores of the Atlantic (Fig. 138) and economists at a creditor nation resulting from a favorable balance of trade (p. 387), textual sins of commission and omission are relatively few. Typographical errors are exceedingly rare.

The author's style is pleasing and lucid, and quotations from other books are chosen well. Regional descriptions and interregional comparisons are good. Maps, graphs, diagrams, and photographs are clear, and the accompanying legends are relevant and mercifully brief. Each of the 261 illustrations is actually referred to in the text. Nary a footnote appears.

No sources are given for statistical data, most of them undated, which appear in the text. Data for 1940 are cited eight times, while 1942, 1943, and 1944 data are used but once. Statistical tables (pp. 287, 292, 338) are dateless and sourceless, and only one of 13 graphs carries a date.

At times no distinction is made between actual and potential resources. On page 439 we read, "In remote regions with resources, there is often no production." How can environment be a resource unless it actually functions in the service of man? The lack of a truly dynamic philosophy of resources is perhaps the book's greatest weakness. Who can tell what are a region's resources without a careful appraisal of such nonenvironmental factors as individual human wants, social objectives, and the state of the arts?

While some readers may prefer less emphasis on primary production, all are indebted to Professor Dicken for his painstaking areal differentiation of the earth.

Washington and Lee University M. OGDEN PHILLIPS

The Development of the American Glass Industry. By Pearce Davis. Cambridge: Harvard University Press, 1949. Pp. xiv, 316. $6.00.

The first purpose of this study by Professor Davis is "a historical account

of the economic evolution of glass manufacture in the United States, reviewing the industry's changing quantitative and qualitative aspects, its technical and mechanical progress, and its progressive adjustments in the expanding American economy." This ambitious purpose is accomplished in a very scholarly and thorough study. Mere recital of fact is notably absent, despite the amount of detail offered. The limitations of both the quantitative data and the historical records presented or quoted are fully set forth, an admirable and not too common virtue.

Glass affords a very interesting study of method and extent of restrictive practices and regulation of output by organized skilled craftsmen. This study, the second purpose of the book, is interesting, even in its details. The "analysis of the interrelationships between the tariff policy of the United States and the growth of glassmaking," the third purpose of the book, is full and receives considerable attention. It is unfortunate that, as a whole, such a significant book does not make very good reading. The first chapter, a short history of European glassmaking and the sections on labor are exceptions. Perhaps a large part of the difficulty might be traced to the inclusion, in text, of a great many figures and dates.

Reference should be made to Warren C. Scoville's *Revolution in Glassmaking* (reviewed by Myron L. Hoch in the July 1949 issue of this journal). Dr. Scoville devotes his first three chapters to summarizing the development of the glass industry as background for his primary concern, the role of the entrepreneur (specifically, the Libbey-Owens or "Toledo Group") in the glass industry. Aside from that summary the two books are quite different in purpose and in content. The research of Dr. Davis was made available to Dr. Scoville, who relied on it at several places in his first chapter.

University of North Carolina ROBERT Y. DURAND

Effective Communication in Industry. By Paul Pigors. Lt. Rush Toland Memorial Study No. 1. New York: National Association of Manufactures, 1949. Pp. 88.

This study by Professor Pigors is, in the reviewer's judgment, a brief but highly significant piece of work. In the first place the Award Committee of the National Association of Manufacturers is to be congratulated on having selected one of the best, if not the best, qualified men in the country to write on the subject of communication in industry. In the second place, the whole tone of the study carries out to a high degree the ideal which Lieutenant Toland had in mind when he left part of his estate to the association. Pigors has in straightforward and understandable fashion set forth some very practical guides for the improvement of employer and employee understanding through the development of genuinely effective communication.

The special student of industrial relations will find little in the study in the way of new ideas with which he should not have been acquainted from one source or another. He will, I think, find Pigors has put these ideas together in a compact and very convincing analysis of the communication problem. The chief value

of the study is the sound advice which it offers to practical men in management and in organized labor who genuinely desire to promote better relations on the basis of effective communication. When one recognizes the amount of money which is currently being spent on communication schemes which frankly have been of very dubious value, it is hard to see how a cost-minded executive can afford to pass up the findings of this study.

Teachers can make considerable use of the study in courses in industrial relations. It is well organized and equally well written. Finally, the student and, for that matter, anyone else interested in further reading will find that the bibliography is complete and up-to-date. In conclusion, this study although brief is highly significant and is worthy of being the Rush Toland Study Number 1.

University of Alabama BURTON R. MORLEY

The Administrator: Cases on Human Relations in Business. By John D. Glover and Ralph M. Hower. Chicago: Richard D. Irwin, 1949. Pp. xiv, 690. $5.50.

Two professors of the Harvard Business School have presented an outstanding exposition of the case method study of human relations from the standpoint of the business administrator.

The introduction, to the academician, is one of the most valuable sections of the book since it contains a clear rationale for the case system. In advancing the case approach, the authors claim that administrators in business cannot be developed "by the accumulation and the memorizing of facts," or by the "memorizing of 'rules' and 'principles,' " or "by the discussion of generalities or abstractions," or "through reading about administration," or by being " 'lectured' into being administrators," or "by being told what and how they should think." The authors believe that the case method of study and discussion will help to develop the qualities which distinguish the administrator: "to think and act *responsibly*, to work cooperatively with others, and to provide other opportunities to work effectively and with satisfaction within the group." Some of the advantages claimed for case study and discussion are open to question, such as the statement that "we know of no method of learning which is as demanding of students as the 'case method.' " The role playing approach is considerably more demanding and considerably more likely to develop the "feel" claimed for case discussion.

Professors Glover and Hower have worked out a superb group of cases, high grade in quality and presentation. Cases are taken from actual circumstances and realistically set down. Another high point is the variety of cases. Many different types of businesses and diverse problems are seen in these cases. A particularly strong feature is the probing nature of questions at the conclusion of the cases, for the authors say, "There are no 'answers' in this case book." It would be hard to study and discuss these cases without arousing some intellectual curiosity. Stimulating excerpts precede many of the cases—quotations from Francis Bacon, Harold Laski, F. J. Roethlisbeiger, Niccolo Machiavelli, Dwight D. Eisenhower, Winston Churchill, and G. Bernard Shaw among others. The authors used discriminating taste in their selections even though the connection between excerpt and case material is occasionally somewhat forced.

If the authors' premise in favor of the case approach to a study of human relations is sound, which it is, then they have come up with a corking good book.

University of North Carolina RICHARD P. CALHOON

Job Evaluation. By John A. Patton and Reynold S. Smith, Jr. Chicago: Richard D. Irwin, 1949. Pp. xv, 316. $4.00.

This volume stands out as fresh and invigorating among the postwar rash of books on this subject. The authors, who are professional management consultants, have done an excellent job with respect to two very important points, writing and organization. The book is clearly written; in a field in which language can be extremely confusing, there are no tortuous passages. And, with few exceptions, the material covered has been admirably organized.

In general, the authors have presented the background necessary for an understanding of job evaluation, the procedural steps requisite to the evaluation process, the technique of the process itself, the relationship between the evaluation process and rationalization of the wage structure, and personnel evaluation. From the standpoint of use as a text in a college course, some of these subjects have been treated very fully, while others have received highly condensed treatment. For example, the origin, history, need for, objectives of, and policies affecting job evaluation are all dealt with in a single chapter of 23 pages. Such a summary may be welcomed by the busy executive, but is likely to need supplementing by the college teacher. Again, a chapter of 37 pages is devoted to job analysis and job descriptions, but about 24 of these contain only illustrated forms. The actual discussion of how information is obtained for inclusion in the job description takes slightly less than two pages. The authors have emphasized the point rating method almost to the exclusion of ranking, grading, and factor comparison methods of job evaluation. These last three have received a scant 10 pages of discussion. And yet, other subjects such as the wage survey and the wage curve have been given very thorough treatment.

What some may undoubtedly consider a shortcoming is the fact that the book plunges almost immediately into a two-chapter description of job evaluation methods. The remainder of the book is organized on a procedural basis, going from one topic to another as the work of installing a system would normally progress. Since job analysis, descriptions, and specifications are common to all systems or methods, for instructional purposes it seems natural to the student to begin his study with these topics. However, this is not a serious objection for those who would like to use this book for a course in job evaluation, for a complete procedural approach can be achieved with comparatively little rearranging of chapters.

The book contains many excellent features. The authors have taken a realistic approach to the increasingly important role unions are playing in the establishment and maintenance of job evaluation programs. Important points concerning union attitudes and policies with respect to job evaluation have been skillfully integrated into the discussion throughout the book. The work does not attempt to "sell" a particular system of job evaluation, but deals generally with the

techniques and procedures which are common to all point systems. Chapter 11, which analyzes the causes of job evaluation failures, will prove useful to both teachers and executives concerned with the subject. This chapter reflects the wide experience the authors have had in this field.

Job Evaluation is a valuable contribution to the literature in this highly specialized field of management. Despite its very condensed treatment of some features of the subject, its clarity, organization, and technical competence make it well suited for use as a college text.

University of Alabama LANGSTON T. HAWLEY

Legal Aspects of Business. By Harold F. Lusk. Chicago: Richard D. Irwin, 1949. Pp. xvi, 815. $5.00.

This book covers a wide area of the law as it applies to business activity. Professor Lusk has previously published a casebook on business law covering those fields of law traditionally associated with courses in business law. In the present volume, he devotes considerable space to additional areas not usually covered in such books as well as the normal treatment of the standard subjects. For example, there are separate short chapters dealing with such matters as Evidence, Torts, Public Utility Corporations, Municipal Corporations, Banks and Banking, and Insurance. The material is presented clearly and concisely, and should be of assistance to students. It is doubtful, however, whether the customary pressure of time will permit the inclusion of these highly specialized subjects in the standard courses on business law, and equally doubtful whether the brief treatment of these subjects would prove useful in more specialized courses.

Apart from these additional areas, the author has written a clear exposition of the general principles of the law as it applies to business. The author presents his material in text form as distinguished from his previous book, which utilized the case method. Those who prefer to teach law from a textbook, from which court opinions, footnotes, and case citations have been rigidly excluded, will find this book useful. Questions and case illustrations are included at the end of each chapter to supplement the text and stimulate the student.

University of North Carolina GERALD A. BARRETT

Studies in Income and Wealth. Vol. XI. Conference on Research in Income and Wealth. New York: National Bureau of Economic Research, 1949. Pp. xii, 452. $6.00

The latest volume issued by the Conference on Research in Income and Wealth consists of six major papers plus more than twice that number of briefer comments dealing with the following topics: the industrial distribution of gainful workers, the industrial composition of the labor force, relative heights of farm and urban purchasing power in the United States, methods of comparing real incomes in different countries, economic forecasts for the transition period, and fluctuations in the saving-income ratio. Authors of the six major papers are, respectively, Solomon Fabricant, Daniel Carson, Nathan Koffsky, Hans Staehle, Michael Sapir, and Franco Modigliani.

The editors divide the Conference proceedings into five parts, including the first two papers within one part and assigning only one major paper each to the others. A three-part division would perhaps have been even more indicative of the nature of the contents, however, since Koffsky's paper on farm and urban incomes and Staehle's remarks on international comparisons of real incomes are essentially concerned with the same problem, *i.e.*, the difficulty of comparing incomes when composition of wants and of consumption differ, and since Modigliani's paper on the consumption function considers some of the forecasting problems presented in a more specific context of Sapir. Except for concern over the general task of quantifying economic variables and behavior, there is no common characteristic of the volume as a whole. "Economic analysis," in the usual sense of that term, is largely restricted to the sections on postwar forecasting and the consumption function and to D. Gale Johnson's and Abram Bergson's brief and incisive comments on Koffsky's and Staehle's papers.

To this reviewer the most interesting paper is Sapir's discussion of the ill-fated prognostications of the government economists and of the more fortunate forecasts made by Woytinsky and the Econometric Instititute. Much of this is now familiar material, but the Sapir presentation is excellent in its condensed description of the oversimplified Keynesian model used by the government forecasters and its explanation of the quantitative errors made. Among the conclusions reached are that prediction went astray in part because of inability correctly to foresee governmental policy and that forecasting is more an art than a science, depending more upon judgment than upon the "objectivity" of model projections.

Modigliani presents further evidence that the consumption function varies cyclically as well as secularly, and suggests that Keynesians have generally been too pessimistic in the conclusions which they have drawn from studies of the saving-income ratio. Koffsky argues that real incomes of farm operators were about on a par with those of urban factory workers in 1945 but were substantially lower than urban laborers' real incomes in 1941.

Indiana University HENRY M. OLIVER, JR.

Money in a Maelstrom. By J. W. Beyen. New York: Macmillan Co., 1949. Pp. 221. $3.25.

Two wars and an economic crisis drastically revised the folklore of international finance. Repeated attempts to replace economic automatism with the flexibility of cooperative human management led to incessant struggle. This book, a kind of vest pocket, international Lombard Street, retells the story of world financial cooperation during the last three decades. The author writes with the full authority of an expert. He is at present executive director of the Monetary Fund and the International Bank.

The story begins with the preoccupation of getting back to "normalcy." Return was impeded by desire to reestablish prewar monetary parities, demand to reduce internal debts to prewar levels, dislike of governmental influence, and failure to master governmental regulation. Perhaps more realistic burdens were the crushing weight of reparations and the international gold standard.

On such a rocky path, initial steps toward monetary stability could only be halting. Beginning with the Finance Committee of the League of Nations and passing through the Dawes Plan, Young Plan, and the Bank for International Settlements, true cooperation remained conspicuously inactive.

Always the folklore forestalled the real cooperation so necessary for success in financing former enemy countries, establishing a new gold standard, or carrying out the German Standstill Agreements.

The desire to return at the earliest possible moment to the international gold standard doomed the World Monetary Conference of 1933, for nations could not digest the subordination of domestic monetary affairs to international exchange stability.

The author fondly claims that the Bank for International Settlements was the first operating institution in the field of international finance which had real possibilities for consultation of menetary authorities and development of cooperative programs. It failed because it was denied a common purpose. International finance had become the handmaiden of national political leaders.

The Bretton Woods Conference established a world monetary authority with rules of procedure and powers of enforcement. The resultant institutions cannot stand alone. To sail clear of the maelstrom in the treacherous seas of international finance, nations must (1) attain internal stability, (2) pay for rehabilitation with grants and long-term loans, (3) establish over-all equilibrium for Bretton Woods nations, (4) create realistic rates of exchange, (5) attain political stability, (6) establish regional monetary systems as transitions to a world-wide system, (7) accept governmental direction of production and trade during a transition period, (8) let the International Bank direct the flow of capital.

One cannot argue with Mr. Beyen's historical account, for what's done is done. Neither is there much chance to differ with his program for it represents what's being done. There may be those who dislike both the method and the substance of these current affairs, but their recourse seems to be the submission of a minority report.

The reader of this book will be rewarded with lessons of such importance that they should be recorded here, if only in outline form:

International cooperation in economic and financial matters develops with the speed of the sloth.

Stable economic conditions in an unstable world don't just happen. They are attained through careful thought and hard work.

People no longer will pay the price of Spartanism exacted by the automatic functioning of the classical gold standard.

Between the wars nations fostered the fantastic contradiction that stability in exchange rates could be maintained while the international commercial system was being destroyed.

When the affairs of men do not fit the "immutable" laws of finance, it is the laws that change, not the affairs of men.

The principle of economic freedom rests on the idea that hardships caused by war and crisis can be prevented by government without complete regimentation of economic life.

University of Tennessee KARL A. BOEDECKER

National Income and Income Analysis. By Richard Ruggles. New York: McGraw-Hill Book Co., 1949. Pp. viii, 349.

As the author rightly remarks, this book "contains little that is original; it merely brings together generally accepted material" (p.v.). Part One gives a basic introduction to the national income concepts and statistics of the U. S. Department of Commerce and to input-output tables. Part Two, "Income Analysis," opens with two good chapters on the historical development of the United States economy since 1790 and, more particularly since 1929, the year when prosperity ended and the U. S. Department of Commerce national income series begins. The next two chapters introduce tools and concepts of income analysis, followed by two concluding chapters on economic policies for maintaining stability at full employment level. The treatment in Part Two is, of course, strictly Keynesian, dealing with aggregate expenditures, savings, in vestments, the consumption function, the multiplier, etc. Wherever applicable, these concepts are illustrated through hypothetical national accounts and input-output tables.

Portions of an early draft of this book have been used in elementary, intermediate, and advanced economics classes at Yale (p. vi); but though the text in its present form contains some detailed material conveniently placed in appendixes, it remains on a fairly elementary level throughout. Professor Ruggles possesses enviable didactic skill and writes with great lucidity and directness. Everything would be well had he not gone to extremes in bypassing the well-known perplexities, open problems, and alternative solutions with which his subject abounds. He studiously omits any references except to the work of the U. S. Department of Commerce; he has no suggestions for further reading; and he manages to talk Keynesian economics and national income analysis without ever mentioning Keynes, Kuznets, or any other of the innovators upon whose achievements his book rests. Only Quesnay and Leontieff somehow managed to slip in (on p. 131), the latter perhaps by virtue of geographic proximity. For students taking economics as part of their general education, Professor Ruggles has provided an easily digestible, well-organized text that is remarkably free from the dangerous germ of doubt. Economics students, we would believe, need stronger stuff.

University of Georgia GREGOR SEBBA

Case Problems in Finance. By Pearson Hunt and Charles M. Williams. Chicago: Richard D. Irwin, 1949. Pp. ix, 402. $4.50.

For the first time since 1935 a volume dealing solely with case studies of financial problems has made its appearance. Messrs. Hunt and Williams have assembled 48 separate cases of which 29 were included in mimeographed form among the problems used in the first year finance course at Harvard Graduate School of Business in 1948–49. The reviewer's task of criticism is particularly difficult for a work of this kind, for it is only after preparing and teaching the cases that the strength or weakness of the different problems emerges.

Although there is some unevenness between the studies, adequate material

is included to develop all major topics examined in the standard corporation finance course. Varying in length from 2 to 25 pages, few cases should require more than one class hour for discussion. Short cases, focused upon a single aspect of financial policy, are not only generally regarded by students as parables, but they tend toward unreality. Fortunately, Messrs, Hunt and Williams include few of these, but those included deal with such matters as privileged subscription, sale and lease-back arrangements, and private placement of securities.

A strong feature of the collection is the emphasis which is placed upon financial analysis and financial management, especially of working capital problems. One particularly good case permits the student to work out a cash budget and apply it in planning the need for funds to meet seasonal requirements. While some of the cases are thinly disguised (Consolidated Motive for American Locomotive), in others it is more elaborately conceived (Cellulose Corporation for Monsanto Chemical). The alterations from actuality, however, sometimes distort basic questions of financial policy in order to pinpoint a particular financial problem. The volume concludes with a group of comprehensive cases which permit the student to bring to bear his understanding of those factors which shape the over-all financial policy of corporations.

Although *Case Problems in Business Finance* is ill adapted for beginning undergraduates in finance, it should serve as a splendid source of material for advanced study of the problems encountered in the development and administration of financial policy.

University of North Carolina JOHN T. O'NEIL

Expectation in Economics. By G. L. S. Shackle. London and New York: Cambridge University Press, 1949. Pp. x, 146. $3.00.

The publisher advertises this book as a highly original treatment of its subject, and the book is all of that. It is also a very ingenious treatment, and what is more important, a very plausible one on the whole.

The basic assumption made by Shackle is that a person decides on one course of action out of a number of rival courses because this one gives, as an immediate experience, the most enjoyment *by anticipation* of its outcome. This assumption and most of the theory developed from it are said to apply to all human decisions about the future, economic as well as otherwise. But the specific applications of theory are of an economic nature.

The degree of pleasurable anticipation is held to vary directly as the desirability of the outcome and inversely as the *potential surprise* associated with it. The latter part of this theorem may seem puzzling until one comes to understand that the author's conception of potential surprise is itself negatively correlated with the (subjectively determined) probability of occurrence. This makes the pleasure of anticipation vary directly with probability of occurrence, which is familiar doctrine, and, no doubt, common sense as well.

As applied to economics, the desirability of outcome of an investment is taken to be the discounted value of the total profit to be obtained (p. 60). Thus the

pleasurable anticipation of a prospective investment varies directly as the discounted value of the various *hypothetical* profits which may be imagined, and varies directly also with the probability of occurrence of such profits. If ϕ is the degree of pleasure in anticipation, x is the hypothetical (discounted) profit, and y is the potential surprise of the hypothetical profit, than the author writes $\phi = \phi\ \{x, y(x)\}$, indicating that while the pleasure is a function of the other two variables, this relationship is subject to a restraint between y and x. The author then shows that a maximum value of ϕ in its restricted path will exist, i.e., there will be some point such that

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$$\frac{d\varphi}{dx} = \frac{\partial\varphi}{\partial x} + \frac{\partial\varphi}{\partial y} \cdot \frac{dy}{dx} = 0. \qquad (i)$$

If the investment should develop a loss, pleasure will turn into pain and ϕ will be negative. There will be a minimum point for ϕ at which (i) will obtain again, corresponding to the maximum pain from contemplating a loss. These maximum and minimum points on the x axis the author calls the "primary focus values of x," or the "primary focus outcomes" of a contemplated investment. The *standardized* focus outcomes are found by replacing the primary focus outcomes by their equivalent carrying nil potential surprise. Decisions are made by balancing these standardized focus outcomes against similar values for other courses of action according to Shackle's theory. For example, if it takes three times as much focus gain to compensate the focus loss for one proposal investment and only twice as much for another proposal the investor will prefer the former.

There is an interesting chapter which develops the effect of expected changes in expectation upon present expectation. Certain restrictions are found to exist with respect to the way in which the focus outcomes can vary regardless of what the future may bring before the final outcome is known. These restrictions explain why the approach of a critical election tends to reduce the flow of investment.

The insignificant physical appearance of this slender volume belies the vast amount of theory it contains as well as its very considerable contribution to economic dynamics.

University of Florida MONTGOMERY D. ANDERSON

Readings on Agricultural Policy. Edited by O. B. Jesness. Philadelphia: Blakiston Co., 1949. Pp. xi, 470. $4.75.

In September 1947, the American Farm Economic Association gave approval to a proposal of its executive committee to publish in volume form reprints of articles written on the several fields which comprise agricultural economics. *Readings on Agricultural Policy* is the first book to be published as a result of this action. The topic is especially appropriate for the initial project because a great deal of confusion and doubt exists about our agricultural policy today.

Professor Jesness, with the assistance of an advisory committee, has done a creditable job of selecting some 34 articles and reports from the vast amount of materials which might have been included. Particular attention has been given

to articles published in the *Journal of Farm Economics* and to the reports of the Association of Land-Grant Colleges and Universities. While 16 of the 34 selections were taken from these two sources, the others were chosen from a number of journals, books, and reports of various sorts.

The readings are grouped under four sections. Part I, "Background," includes five selections which deal largely with the importance of agriculture in our economy. Agricultural fundamentalism is questioned and emphasis is placed on the interdependence of the various sectors of our economy. Part II, "Price and Production Adjustment," includes 16 selections. Parity prices and parity income as the major objectives of our agricultural policy since the end of World War I occupy a major proportion of this section. Much of the discussion deals with what type of farm program is needed for the present postwar period. A stimulating analysis of the ever normal granary and several interesting discussions of the concept of forward prices are included. The importance of international trade in agricultural policy is capably presented in five selections under Part III, "International Trade and Relations." The final section, Part IV, "Land and Rural People," includes nine readings covering land tenure, conservation of land and human resources, and rural living and social facilities.

American agricultural policy may be broadly divided into two periods: (1) from 1776 to 1920, when the establishment of a rural economy consisting of independent farmers with full and free ownership of their land was the main objective; and (2) since 1920, when the objectives have been set in terms of attaining certain prices for farm products or a certain level of farm income. This book is definitely about the latter period. The presentation is largely economic, and the readings selected seem to indicate a need for reappraisal of our agricultural policy.

This collection of readings is a convenient and valuable reference for all professional agricultural workers. Teachers, research scientists, extension personnel, and administrators, whether economist or noneconomist, will find it helpful in their work. However, interest in this book should not be confined to the professional group. Agricultural policy is a part of public policy, and as such, is the responsibility of the nation's citizens. The American people want unbiased information which has been analyzed and summarized by competent people in order that they may act intelligently in assuming this responsibility. This reviewer commends this book to the attention of all persons who are interested in helping to build a better rural America.

Virginia Polytechnic Institute W. L. Gibson, Jr.

Urban Land Economics. By Richard U. Ratcliff. New York: McGraw-Hill Book Co., 1949. Pp. xii, 533. $5.50.

The field of land economics has been developing rapidly during the last decades. The principles governing the use of agricultural land attracted particular attention, thanks to the pioneering work of men like Ely, Wehrwein, and Salter, all connected with the University of Wisconsin. Their contributions have now been complemented by Professor Ratcliff, another member of the same university. His *Urban Land Economics* is unusually well written, and deserves wide

acceptance by workers, teachers, and advanced students in the field of land economics.

The book is somewhat in the Madison tradition in that it avoids one-sidedness. The author claims that the determination of land use is a market process and devotes the greater part of the book to that thesis. Two chapters deal with the demand side for housing (chap. IV) and nonresidential space (chap. V). The supply side is taken up in the chapters on the construction industry (chap. VI) and the building process in general (chap. VI). The two following chapters on the chief forms of land credit (chaps. VIII and IX) contribute still further to the understanding of the factors entering into the supply structure for urban land. The two market sides are brought together in an analysis of the functions of the market for urban land, and housing (chaps. X and XI). The following chapter (XII) attempts to clarify the theoretical issues of income from land, especially rent, under marginal productivity concepts, and neoclassical distribution theory.

However, the market and distribution analysis is by no means carried to extremes. The three opening chapters of the book, and again the four last ones give ample evidence that the author recognizes well the importance of institutional factors. It is from this background that he is able to write a penetrating analysis of urban land policies in general (chap. XIV), and the economics of the housing policy in particular (chaps. XV and XVI).

This reviewer believes that Professor Ratcliff deserves praise for his double-barreled approach. Despite his preference for the "theoretical" treatment of the market process, he manages to give the "institutional" factors their due. He may not have succeeded fully in the fusion of the two aspects of the urban land question (a task which has not been solved in the agricultural branch of land economics either), but he certainly achieved a comprehensive, fairly well-balanced, and highly welcome synopsis of his field.

North Carolina State College RUDOLF FREUND

STATE REPORTS

ALABAMA

Economic activity in Alabama during the third quarter of 1949 reflected continued weakness, which has characterized the state's economy since the first of the year. However, toward the end of the quarter there were some evidences of improvement. The index of industrial production, prepared by the University of Alabama's Bureau of Business Research, for July dropped to 160, 40.5 index points below the postwar peak reached in December 1948. To a very considerable extent this sharp decline mirrored the work stoppages and reduced work week in coal mining and coke production, and the depressed condition of the textile industry. By September 1, however, industrial production had recovered sufficiently for the index to reach 183. But even at this figure it remained 10 per cent below the December 1948 peak. Industrial production in the state during the third quarter compared very favorably with that of the nation as a whole. At the end of August the index of industrial production for the United States stood at 170, and remained 12.8 per cent below the postwar peak reached in November 1948. Because of the exceptional importance of the steel industry in Alabama's economy, the unsettled condition of labor relations will undoubtedly have a more depressing effect on production levels in the state than in the nation.

Manufacturing employment in the third quarter continued the decline which began in 1948. Although the rate of decline was smaller than that for the preceding quarter, the third quarter decrease of 1.2 per cent represents the third continuous quarterly decline since the first of the year. Third quarter employment in manufacturing was 10 per cent below that for the corresponding period a year ago. Initial claims for unemployment compensation rose sharply in July when they were 16 per cent above those for June and 128 per cent higher than those for July 1948. Although they declined somewhat in August, they were still 93 per cent above the August 1948 level.

Retail prices, as reflected by the Consumer Price Index for Birmingham, remained fairly stable when compared with the second quarter. However, slight increases were noted during the last two months of the quarter. At the end of the third quarter the index was only 4 per cent below the peak reached in August 1948. Prices received by Alabama farmers continued their long decline. Third quarter farm prices were 2.4 per cent below those of the second quarter, and 9.1 per cent under those of the third quarter of 1948.

Despite the decline in farm prices, farm income in Alabama held up suprisingly well during the first seven months of 1949. Farm income from January through July was 6.3 per cent above the same period of 1948. Farm income in the United States for the first seven months of 1949 was 9.1 below the corresponding period of 1948. The composition of Alabama's farm income shows that crops are still somewhat more important in the state's agriculture than is livestock. During the first seven months of 1949, crops accounted for 52.9 per cent of farm income, and

livestock and livestock products made up 47.1 per cent. The corresponding figures for the nation as a whole were 35 per cent for crops and 65 per cent for livestock.

The average number of hours a week worked in manufacturing in Alabama increased slightly in the third quarter. But average hourly earnings remained stable. There has been no apparent improvement in the real income position of manufacturing workers during the first three quarters of 1949. The work week in bituminous coal mining during the third quarter dropped substantially from the second quarter; average weekly hours were less than 25. Average hourly earnings in coal mining fell slightly during the quarter.

Collections from state administered taxes for the fiscal year October 1, 1948–September 30, 1949, amounted to $95,487,202. This represents an increase of 8.4 per cent over collections for the preceding year. Sales, gasoline, income, and tobacco taxes continue to be the state's largest revenue producers.

University of Alabama LANGSTON T. HAWLEY

FLORIDA

Florida citrus began moving to market in volume much later than usual in the fall of 1949. By mid-October less than 1 per cent of the crop had been shipped. Grapefruit shipments were delayed by the disastrous hurricane in late August, which cut this year's crop by an estimated 24 per cent to 23,000,000 boxes. This loss constituted a major part of storm damage, which was estimated to be $80,000,000 for the state. In contrast the slow movement of a record high orange crop of 61,000,000 boxes was generally attributed to the new citrus code adopted by the legislature. This was designed to raise maturity standards for fresh fruit to curb early season shipping of green oranges and require grade labeling for canned juices. Both provisions were under attack in the state courts in late October. In contrast to the three previous years, citrus fruit prices during the early weeks of the 1949–50 season were at highly profitable levels.

A special session of the state legislature convened on September 7 to provide additional revenues to meet the state's needs for the biennium. A retail sales tax was passed to take effect November 1, 1949, with a basic rate of 3 per cent. The law provides for numerous exemptions, including groceries, clothing purchases up to $10, medicines, and various items used primarily on farms, as well as the things already subject to specific taxes. However, admissions and transient rental accommodations are also subject to the tax. Estimated annual yield will be $45,000,000. This is partially offset by companion legislation, (1) earmarking the seventh cent of the gasoline tax for county roads instead of its being used for general state purposes as was done for years, and (2) sharing the cigarette tax, now raised to 5 cents, with the municipalities on a source basis. This is the first important instance of state tax sharing with the cities in Florida. No action was taken toward revising the state constitution to permit the levy of an income tax nor on many needed reforms in the state's fiscal administration.

University of Florida C. H. DONOVAN

MISSISSIPPI

The seventh largest United States cotton crop (estimated as of October 1, 1949, at 15,446,000 bales), which is 37 per cent greater than the 1938–47 average and 4 per cent greater than last year's production, is no cause for elation in Mississippi, despite 90 per cent of parity support prices. Mississippi's estimated production of 1,460,000 bales (500 pound gross weight) is 38 per cent under its 1948 production and 10 per cent under its 1938–47 average. Although production is off substantially from 1948 in all states east of Oklahoma with the exception of Florida, whose cotton production is relatively insignificant, only South Carolina approaches Mississippi in percentage decrease from last year.

Any given percentage decrease in cotton production is probably more significant to the economy of Mississippi than to any other state. Mississippi receives a higher proportion (35.2 per cent in 1948) of its income from agriculture than does any other cotton producing state. Indeed, only four of the 48 states receive a higher percentage of total income from agriculture, Arkansas being second in this respect. Aside from these two, no other cotton producing state received as much as 20 per cent of its total income from agriculture in 1948. Moreover, next to Texas, Mississippi is the largest producer of cotton.

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The suit of a former Jackson Negro teacher demanding equal pay with white teachers having similar training and experience is pending in the United States District Court. It is anticipated, in view of several United States Supreme Court decisions in recent years, that as a result the state will be faced with the necessity of equalizing the pay of Negro teachers with that of white teachers. It is estimated that this will require $4,250,000 a year on the basis of present salaries. The magnitude of this problem is indicated by the fact that annual expenditures for common schools now approximate $33,600,000 of which the state provides $17,500,000. If the legislature should assume this added cost it would require $8,500,000 each biennium. This would be an increase of one-fourth over its present aid to education and an increase of 8.5 per cent in its total general fund budget, which is $99,000,000 for the present biennium. If the problem is left to local government the only alternatives would be increased school taxes or lower salaries for white teachers.

With a view to preventing federal court action Governor Wright appointed a committee to study the problem and make recommendations. This committee reported during the summer and proposed that teacher salary schedules be based on (1) training, (2) experience, and (3) score received on the National Teachers Examination. It is estimated that on this basis an additional $4,800,000 a year would result in an average salary increase of $300 a year for the state's 9,400 white teachers. With the calling of a special session of the legislature to act before the case mentioned above comes to trial at issue, a series of meetings were held in various parts of the state at which the teachers voted on whether they wanted "To pay teachers salaries in Mississippi on the basis of training, experience, and the results of the National Teachers Examination contingent on an additional

appropriation of $4,800,000 per annum." This was overwhemingly rejected by both the white and Negro teachers as follows: white—5529 against, 2462 for; Negro—4579 against, 208 for. The possibility of legislative action prior to the regular session in January 1950, and prior to trial of the case in November, was thereby precluded. At the time of this writing (October 15, 1949) the situation is quite cloudy.

* * * * *

Under specified conditions the Governor may set the state property tax rate below the statutory four mills, but not under 2 mills, on the dollar of assessed valuation. The fiscal situation of the state is such that the Governor continued the 2-mill rate for 1949 taxes.

University of Mississippi DAVID MCKINNEY

NORTH CAROLINA

In the light of a considerable increase in industrial activity in August and September, the general feeling of business optimism that prevailed during the spring and early summer appears to have been justified. The number of employed factory workers increased by 20,200 in August and by 11,300 in September. The gains of these two months amounted to approximately one-half of the decline that had taken place during the preceding 10 months. At the end of September employment in factories stood 6.7 per cent below the level of September 1948. The larger part of the recent increase occurred in the textile industry, which ordinarily employs more than half the factory workers in the state. The revival in activity at cotton mills was especially sharp, although it had not by the end of September carried production to the levels of the previous year.

Agriculture is on the whole not quite so prosperous as in the fall of 1948. The cotton crop in the state is smaller and prices of principal crops are generally weaker. Nevertheless, the situation of the farmers is quite satisfactory. Construction of buildings is proceeding at a high level and the large road building program approved by the voters in June is getting under way earlier than had been expected, the first block of state road bonds amounting to $50,000,000 having been marketed in September. Over the next several months an increasing number of contracts for road building should stimulate employment and trade in the state.

The prosperity of North Carolina's industries cannot, however, be sustained by a local road building program since they are much too dependent upon markets that are national or international in scope. The uncertainties that they face are those that are common in different degrees to productive enterprise in America. It is too early to tell how far the adverse effects of British financial difficulties and generally chaotic international conditions may be offset in the short run by the inflationary and promotional activities of Washington.

It is disturbing to note that general fund revenues of the state government during the first three months of the fiscal year that began last July 1 are running somewhat below the estimates upon which the General Assembly relied in the

spring. At that time a deficit of about $5,000,000 was contemplated for the fiscal year 1949–50. The recent trend in collections gives rise to the fear that the current deficit may be much larger.

Davidson College C. K. Brown

SOUTH CAROLINA

Rains, weevil and boll rot damage have reduced South Carolina's cotton crop to an October 1 estimate of 550,000 bales, the third smallest crop in 57 years. Income from cotton and cotton seed growers promises to be less than 90 million dollars this year as compared to 149 million dollars last year. In view of an indicated total supply of 20 million bales the general 1949–50 cotton position is not favorable.

Adjustments being made in farm programs include increased use of hybrid corn, improvement in grazing systems, and increasing livestock production. South Carolina grain is expected to be a fifth larger than last year, corn 15 per cent more, and sweet potatoes and hay somewhat greater than in 1948. Tobacco promises its third largest crop with an all-time record yield of 1325 pounds per acre. Aromatic tobacco production has progressed far enough to deserve special mention. Protected by a guaranteed market some 200 growers scattered through the Upper Piedmont are receiving about $75,000 from a total of 75 acres. The South Carolina Extension Service is signing up only such new growers as it can supervise. The present crop is about $\frac{1}{10}$ of one per cent of the amount of Turkish tobacco usually imported.

* * * * *

Some outstanding research by the Bureau of Agricultural Economics in cooperation with the South Carolina Agricultural Experiment Station has been presented in recent Experiment Station bulletins. The predominance of small-size farms especially in the Piedmont area results in a high investment per acre in power and machinery and consequent larger cash operating expenses. However, carefully selected power units were found to be more economical than mules on farms with as few as 50 crop acres.

* * * * *

Recent reports by the Bureau of Agricultural Economics indicate a slight upward trend in tax levies on farm real estate in South Carolina, which appears to be general over the nation. Even so, South Carolina's farm property taxes at $0.26 per acre are still comparatively low whether viewed on a per acre or a per $100 of value basis. Of the 16 states listed in the "southern" divisions only three (Texas, West Virginia, and Alabama) report lower per acre taxes than South Carolina and only two, West Virginia and Delaware, lower taxes in relation to value. By either of these measurements, farmers in this state pay less than half as much in property taxes as farmers in the nation as a whole.

* * * * *

For the first time in recent years, public revenues in South Carolina have turned downward but it is too early to predict whether this indicates the begin-

ning of a trend in this direction. Of significance, however, is the fact that this downward turn came about in spite of a substantial increase in receipts from gasoline taxes which are "earmarked" for highways. Thus the next legislature may be faced with the task of curtailing the activities of the general departments of government (education, welfare, etc.) at the same time its road building program is expanding. The alternative is more taxes.

Clemson College W. T. FERRIER

TENNESSEE

Tennessee was not an exception to the spending spree indulged in by most states in 1949. Its budget for the current fiscal period is at an all-time high. Higher pay for state employes was the cause of some of this increase, but accounted for by no means all of it. More cash was placed in old age assistance funds. Maximum payments were hiked to $50 a month. However, the state legislature rejected a proposal to pay bonuses to men and women who served in World War II.

One item in Tennessee's fiscal program was down from the previous year's high by more than $26 million when a total of $333,035,338 was paid in taxes to the federal government during the fiscal year. This amount had placed Tennessee sixth among the southern states. In a breakdown of the federal tax collections in the states for the fiscal years of 1948 and 1949, it was shown that about the only actual decrease in Tennessee's tax payment came in the individual income bracket. During the fiscal year 1948, the state paid $201,621,935 as compared to $168,959,773 in 1949. Paid to the United States government in corporation income and profits taxes in this state was $102,236,092 for the 1949 fiscal year, which exceeded the amount paid in 1948 by $4,303,703. Tennessee paid, in addition to the above mentioned taxes, employment taxes in the amount of $24,529,733 compared to $23,362,545 last year, and miscellaneous internal revenue amounting to $37,309,739 compared to $36,171,416 last year.

On the receipts side of the ledger, Tennessee's state tax collections for the first three months of the fiscal year (July, August, and September) were ahead of receipts for the same period last year by $323,161. The increase came despite a decline of $622,392 reported for the period in finance and taxation department collections. Receipts from the state's two largest money-makers, the sales and gasoline taxes, lead the decline in this department's collections. Sales taxes showed a decline for the seventh straight month over the same month for the last fiscal year. Gasoline tax collections for the quarter dropped $297,060 from last year's first quarter to a total of $9,753,440. Officials said this decrease probably was caused by the legislature's action early this year of taking the 7-cent-a-gallon tax off aviation fuel.

The increase in the over-all tax was attributed to an increase in the collections of state drivers license fees totaling $705,325 for the quarter. The insurance and banking departments also reported increased collections.

One small, new source of revenue entered the budget just after the quarter's end. The state collected its first claim against the property of an old age assistance

recipient who died leaving property. The payment of $114.80 was received under a provision enacted by the 1949 legislature, and made effective May 1, 1949, in which the state may hold a claim at death against property of recipients of old age assistance. This amount was paid from the estate of a woman who died September 28 and represented the benefit payments the woman had received from May through September. Five other such claims have been filed up to the present time. This legislation was not passed as a revenue producer, but it seeks to serve as a "protector" of inroads on old age benefits by those who are not indigent.

George Peabody College for Teachers JAMES E. WARD

VIRGINIA

The business recession which hit Virginia the latter part of 1948, and persisted into 1949, may have run its course. Many industries in the state have shown improvement in recent months. The construction industry, for example, on the basis of construction contracts awarded, showed a 30 per cent increase in August 1949, over August 1948. The first months of the year the increase was largely in church construction and public buildings. In recent months there has been a strong upward surge in house and apartment construction, though there is still an unprecedented amount of church building in certain areas of the state. The rayon industry has improved and, since a large amount of rayon fibre is produced in Virginia, her economy should profit from this trend. Trade statistics—wholesale, retail, and furniture sales—indicate a weakening over 1948. The encouraging part of the picture has been the strong trend in automobile sales. The conclusion is that the business outlook in the state at present is encouraging.

There are several situations on the economic front which becloud the picture, however. First, farm income prospects have weakened somewhat due to price declines in several major crops. Some farm costs have declined, but whether they have fallen sufficiently to leave farm income in a relative favorable position is not yet determined. Second, the paralyzing strikes, present and in prospect, if not settled promptly, can do irreparable harm to the recovery—in fact, may reverse the trend. Present strikes have already brought curtailed production and increased unemployment in Virginia. Coal production is an important industry in the state, and the three-day week and the present strike are having a serious effect. And finally, the European currency devaluations, particularly of the bloc countries, may have an adverse effect upon business conditions in the State. Because of greatly enhanced competition with American-made goods, and because of raw materials surpluses, a powerful bearish influence is liable to materialise. Just how serious it will be and how long it will last is not predictable. At present, Virginia's economy would appear to be sufficiently strong to weather any reasonable storm from this direction.

University of Richmond HERMAN P. THOMAS

PERSONNEL NOTES

Carl E. Abner has been appointed instructor in economics at the University of Louisville.

Charles F. Acton, formerly with the University of Kentucky Bureau of Business Research, has accepted a position with Kimberly-Clark, Neenah, Wisconsin.

Vance Q. Alvis, who was on leave of absence at the University of Virginia during the past session, has returned to his position as assistant professor of economics at the University of Arkansas.

A. M. Anikeeff is now assistant professor of institutional and industrial management at Mississippi State College.

Ivar Axelson has been appointed lecturer in marketing at the University of Miami.

Kenneth Back has resigned his position at the University of Kentucky Bureau of Business Research to accept a position with the Kentucky Department of Revenue.

Henry G. Baker is now associate professor and chairman of marketing and retailing concentrations at the Atlanta Division, University of Georgia.

David M. Beights has resigned his position at Rollins College to become professor of accounting at Florida State University.

Bonnie Fay Bellamy is instructor in statistics at the College of Business Administration, University of Georgia.

Robert E. Bickner is now an instructor in the College of Business Administration at the University of Georgia.

Vera Briscoe has resigned her position as research associate of the University of Kentucky Bureau of Business Research.

Edwin B. Brooks, Jr., has been appointed assistant professor of business administration, School of Business Administration, University of Richmond.

Leland Brown, formerly of the Division of Business English of the University of Illinois, has been appointed assistant professor of business communications at Tulane University. He has charge of the courses in business letters and business reports.

Robert Logan Bunting has been appointed assistant professor of economics at the University of North Carolina.

Carl E. Calohan, formerly of the University of Alabama, is now instructor in economics, University of Florida.

Lewis J. Carey from Superior Teachers College is now associate professor of economics at Mississippi State College.

Ira Columbus Castles is serving as part-time instructor in economics at the University of North Carolina.

Virgil Christian has been appointed instructor in economics at the University of Kentucky.

J. Carl Clamp, formerly of Duke University, has been appointed assistant professor of economics at Florida State University.

Wiles Elliott Converse has been appointed assistant professor of economics at North Carolina State College.

William R. Corson has been appointed instructor in economics, University of Miami.

C. Merle Crawford, formerly at the University of Illinois, has been appointed instructor in marketing, University of Florida.

William C. Davis is instructor in accounting at the College of Business Administration, University of Georgia.

Harvey T. Dienzer has been promoted to professor of accounting, University of Florida.

James H. Dornburg has joined the faculty of the School of Business Administration, Emory University, as instructor in economics.

Thomas W. Douglas, formerly assistant professor of industry in the Department of Economics of the University of Virginia, has resigned to accept the position of educational director of the American Association of Ice Industries, Washington, D. C.

Ronald Emma has been appointed assistant instructor in economics at Duke University.

C. W. Emory has been promoted to assistant professor of marketing at the University of Florida.

Milford Estill has resigned from the University of Kentucky Bureau of Business Research staff to enter private law practice.

Roland B. Eutsler, for many years a member of the staff of the College of Business Administration, University of Florida, has recently been named associate dean of the college.

A. Ross Evans, formerly on the staff of the University of Florida and the University of Puerto Rico and now a practicing accountant in Orlando, is teaching accounting at Rollins College.

Mary Evins has been appointed research assistant in the Bureau of Business Research of the University of Kentucky.

Allen F. Ferguson of Harvard University has been appointed assistant professor of economics at the University of Virginia.

P. A. Firmin has joined the Tulane faculty as assistant professor of accounting. He was formerly a member of the faculty at St. Mary's College (California).

Abram Cline Flora, Jr., is a part-time instructor in economics at the University of North Carolina.

C. W. Flynn has joined the teaching staff of institutional and industrial management at Mississippi State College.

Robert L. Froemke, formerly of Georgia School of Technology, is now an instructor in the College of Business Administration at the University of Georgia.

Robert Edward Frye has been appointed instructor in economics at North Carolina State College.

Nicholas Georgesau, formerly of the University of Bucharest and more recently of Harvard University, has accepted a position as professor of economics at Vanderbilt University.

Frank Goodwin has recently been promoted to professor of marketing, University of Florida.

Ralph T. Green has resigned as instructor in economics at Duke University to accept a position with the Federal Reserve Bank of Dallas.

Joseph A. Greene, Jr., of the University of Virginia has been appointed head of the Department of Economics in Mississippi-Southern College.

Eugene W. Griner, instructor in the College of Business Administration, University of Georgia, has resigned to attend Indiana University to work towards his Ph.D.

Glenn Oliver Hamrick has been appointed part-time lecturer in economics at the University of North Carolina.

Harper H. Harden is now part-time instructor in accounting at the School of Business Administration, Emory University.

Francis L. Hauser, until recently lecturer at Rutgers University and a member of the New York Metropolitan Planning Commission, is now associate professor of real estate, University of Florida.

Henry G. Hodges, formerly lecturer at the University of Dayton and the Air Forces Institute, Wright Field, has joined the staff of the University of Florida as lecturer in industrial management.

Marvin Hoffman is now serving as instructor in marketing at Mississippi State College.

Thomas Holland has joined the staff of the University of Miami as visiting professor in economics.

B. B. Hollingsworth is instructor in accounting at Mississippi State College.

George B. Hurff has been named director of the Bureau of Economic and Business Research, University of Florida, succeeding R. B. Eutsler.

Carl Hyldburg, who was assistant in the Legal Aid Clinic in the Duke Law School last year, has been appointed instructor in business law for the coming year.

John L. Johnson, formerly at Michigan State College, has joined the staff of the University of Kentucky Bureau of Business Research.

John R. Johnson has been appointed research assistant in the Bureau of Business Research of the University of Kentucky.

R. J. Johnson has joined the institutional and industrial management staff of Mississippi State College as an assistant professor.

Howard J. Johnston, formerly of the University of Denver, is now instructor in real estate at the University of Florida.

Sanders A. Kahn, formerly instructor at the City College of New York, has been appointed assistant professor of real estate, University of Florida.

J. Robert Karp, formerly instructor at the University of Connecticut, is now assistant professor of economics, University of Florida.

James R. Kay, formerly instructor in money and banking at the University of Virginia, has been appointed assistant professor in the School of Business Administration of the University of Texas.

David M. Kerley, who has held the position of acting assistant professor of

statistics at the University of Virginia during the past session, has been appointed assistant professor of statistics at Pennsylvania State College.

Leonard C. R. Langer, formerly on the research staff at the Graduate School of Business Administration, Harvard University, is now assistant professor at the Atlanta Division, University of Georgia.

Emanuel M. Last has been appointed associate professor of business administration, School of Business Administration, University of Richmond.

Arthur W. Leche has been appointed to the staff of the Department of Commerce of the Eastern Kentucky State Teachers College.

Henry W. Lehman has resigned as instructor in economics at Duke University to enter the practice of law in Chicago.

Madelyn Lockhart, formerly instructor in economics at Ohio State University has become research associate at the University of Kentucky Bureau of Business Research.

John H. MacKay, newly appointed instructor in accounting at Tulane University, was formerly instructor in accounting at the State University of Iowa.

Jean P. Mahan has been promoted to assistant professor of economics at Tulane University, where he teaches work in economic geography and in real estate.

Howard Edwards Manning has been appointed special lecturer in economics at North Carolina State College.

William R. Matthies, formerly of Southern Illinois University, has been appointed associate professor in accounting, University of Florida.

Armistead J. Maupin has been appointed special lecturer in economics at North Carolina State College.

William David Maxwell has been appointed teaching fellow in economics at the University of North Carolina.

Oren McClain has been appointed assistant instructor in economics at Duke University.

Alex Gentry McIlvaine has joined the commerce staff of the Eastern Kentucky State Teachers College.

Wilbur T. Meek resigned as associate professor of economics at the University of Florida to join the staff at Louisiana Polytechnic Institute.

A. C. Michaelis, formerly personnel officer for the Federal Reserve Bank of Dallas, has been appointed associate professor of management at Tulane University to take charge of courses in personnel and production management.

F. Byers Miller, formerly dean of the Evening School of Business Administration, has been appointed dean of the School of Business Administration at the University of Richmond.

Charles N. Millican has been named instructor in economics at the University of Florida.

Herbert Millington is now professor of marketing, University of Miami.

George F. Mitch, recently retired from the faculty of Pennsylvania State College, has been named interim assistant professor of economics, University of Florida.

J. M. Mitchell, assistant professor of economics at Tulane University, has accepted a Fulbright award for research and study in France during the current academic year.

Glenn D. Morrow has resigned as research associate, Bureau of Business Research, University of Kentucky, to accept a position in Japan with the United States War Department.

Will S. Myers, Jr., formerly at Wooster College, has joined the staff of the University of Kentucky Bureau of Business Research.

Howard W. Nicholson of Harvard University has been appointed instructor in economics at the University of Virginia.

Henry T. Owen has been promoted to associate professor of economics at Tulane University. He has charge of courses in statistics and insurance.

Martin D. Palm, formerly of the University of Oklahoma and the University of Texas, has been appointed assistant professor of economics at Tulane University to teach courses in intermediate economic theory and comparative economic systems.

Russel B. Park is research associate at the School of Business Administration, Emory University.

Woodrow W. Pate, formerly at the University of Oklahoma, is now head of the Department of Economics at Centenary College.

William B. Peden has accepted an appointment as instructor in economics at the University of Louisville.

Erhart G. Peterson has been promoted to associate professor of accounting, University of Florida.

Clinton A. Phillips, formerly of Vanderbilt University, has been appointed instructor in economics at Baldwin-Wallace College.

Richard C. Plummer has been appointed visiting professor of business administration, University of Miami.

Jack E. Prince, formerly of Ohio State University, has been appointed associate professor of economics at Millsaps College.

Robert E. Ray has been appointed interim instructor in business law at the University of Florida.

Isaac Newton Reynolds is a part-time instructor in accounting at the University of North Carolina.

James G. Richardson has been promoted to assistant professor of finance, University of Florida.

William B. Ricketts has been named lecturer in marketing at the University of Miami.

Alfred A. Ring has been promoted to professor of real estate, University of Florida.

Raymond W. Ritland is a newly appointed instructor in economics at Tulane University.

Allan J. Robertson, formerly instructor at the University of Missouri, has been appointed instructor in economics, University of Florida.

L. A. Robinson is instructor in accounting at Mississippi State College.

H. John Ross has been appointed lecturer in management at the University of Miami.

John Morris Ryan is part-time instructor in economics at the University of North Carolina.

Frank J. Sabella, formerly on the staff at Washington University, St. Louis, has been appointed assistant professor in insurance, University of Florida.

Howard Schaller has been appointed assistant instructor in economics at Duke University.

Francis John Shannon, formerly at Wayne University, has joined the staff of the University of Kentucky Bureau of Business Research.

Jack Shelton, formerly with the University of Kentucky Bureau of Business Research, has accepted a position with Southern Bell Telephone Company.

Murray W. Shields has been promoted to professor of economics, University of Florida.

Robert S. Smith taught at the University of Guatemala during the past summer.

J. Douglas Snider, formerly of Indiana University, has been appointed instructor in economics at the University of Mississippi.

Waldo E. Sowell is now part-time instructor in accounting at the School of Business Administration, Emory University.

Robert Lee Stallings, Jr., has been promoted to associate professor of accounting at the University of North Carolina.

Hubert F. Stepp, formerly of the University of Virginia, has been appointed professor of economics in the College of Charleston.

William Charles Thompson, Jr., has been appointed instructor in economics at North Carolina State College.

Everett Palmer Truex has been appointed teaching fellow in economics at the University of North Carolina.

Earl K. Turner has been appointed research associate in the Bureau of Business Research of the University of Kentucky.

Andre L. van Assenderp, formerly of Tulane University, has been appointed associate professor of economics at Florida State University.

Mary Elam Vance, assistant professor of accounting and secretarial studies at Mercer University, has been named a member of the Coordinating Committee of the Future Business Leaders of America, which committee is under the sponsorship of the United Business Education Association.

Rutledge Vining, who has been on a leave of absence during the past session with the National Bureau of Economic Research, has returned to his position of professor of economics and statistics at the University of Virginia. He taught courses in price theory and business cycles in the summer session of Columbia University.

Claude Walker has been appointed assistant professor of economics at North Carolina State College.

Gerald E. Warren has been promoted to professor of economics at Tulane University.

William Weiner has joined the Mississippi State College staff as instructor in economics.

Lionel Weiss, formerly at Columbia University, has been appointed assistant professor of statistics at the University of Virginia.

E. Robert Welsch has been appointed assistant professor of business administration and director of placement, School of Business Administration, University of Richmond.

Barton A. Westerlund has joined the staff of the University of Miami as instructor in marketing.

Howard W. Wissner, formerly of Alabama Polytechnic Institute, has joined the faculty of Tulane University as associate professor of economics to teach courses in labor problems and economic principles.

Lowell C. Yoder, formerly on the staff at the University of Arkansas, has been appointed associate professor of marketing, University of Florida.

Raymond J. Ziegler, recently instructor at the University of Omaha, has been appointed instructor in statistics, University of Florida.

The following names have been added to the membership of the Southern Economic Association:

T. D. Adcock, Box 574, Campus Station, Athens, Ga.

Bruce A. Anthony, Mercer University, Mercer University, Ga.

James H. Dornburg, School of Business Administration, Emory University, Emory University, Ga.

Henry J. Engler, Jr., College of Business Administration, Loyola University, New Orleans 18, La.

Joseph A. Greene, Jr., Commerce Division, Mississippi State College, Station A, Hattiesburg, Miss.

Henry G. Hodges, Building "G," University of Florida, Gainesville, Fla.

Sanders A. Kahn, 1944 West Leon St., Gainesville, Fla.

Joseph L. Massie, 425 W. Seventh, Lexington, Ky.

George E. Meeker, P. O. Box 106, Emory, Va.

Charles N. Millican, Building "G," University of Florida, Gainesville, Fla.

Leonard A. Mobley, 1832 M Street, NW., Washington 6, D. C.

L. L. Qualls, Building "G," University of Florida, Gainesville, Fla.

Frank J. Sabella, Building "G," University of Florida, Gainesville, Fla.

W. R. Starnes, Jr., Davidson College, Davidson, N. C.

Clifford A. Strickland, P. O. Box 151, Baltimore 1, Md.

G. E. Warren, College of Commerce & Business Administration, Tulane University, New Orleans 15, La.

William Weiner, Box 948, Mississippi State College, State College, Miss.

Norman E. Weir, P. O. Box 984, State College, Miss.

Fred B. Wenn, Georgia School of Technology, Atlanta, Ga.

Ray O. Werner, Colorado College, Colorado Springs, Colo.

Roy Wood, Box 1258, Clemson, S. C.

BOOKS RECEIVED

Intermediate Accounting. By Arthur W. Holmes and Robert A. Meier. Chicago: Richard D. Irwin, 1949. Pp. xiii, 881. $5.00.

Individual Firm Adjustments under OPA: A Study in the Dynamics of Flexible Pricing. By S. Sterling McMillan and J. K. Galbraith. Bloomington, Ind.: Principia Press, 1949. Pp. xv, 256. $3.50.

Real Estate Principles. By Henry E. Hoagland. 2nd ed. New York: McGraw-Hill Book Co., 1949. Pp xi, 667. $5.00.

Conflicting Patterns of Thought. By Karl Pribram. Washington: Public Affairs Press, 1949. Pp. viii, 176. $3.25.

Introduction to Industrial Management. By Franklin E. Folts. 3rd ed. New York: McGraw-Hill Book Co., 1949. Pp. xiii, 648. $5.00.

Wealth of the American People. By James A. Barnes. New York: Prentice-Hall 1949. Pp. x, 910. $5.75.

Can Labor and Management Work Together? By Osgood Nichols and T. R. Carskadon. New York: Twentieth Century Fund, 1949. Pp. 32. Paper, 20¢.

Aids to Kentucky Governments: A Directory. By Vera Briscoe. Lexington: Bureau of Business Research, University of Kentucky, 1949. Pp. 146.

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Aids Toward Better Public Service. By Vera Briscoe. Lexington: Bureau of Business Research, University of Kentucky, 1949. Pp. 38.

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Arabian Oil: America's Stake in the Middle East. By Raymond F. Mikesell and Hollis B. Chenery. Chapel Hill: University of North Carolina Press, 1949. Pp. xi, 201. $3.50.

American Social Insurance. By Domenico Gagliardo. New York: Harper & Bros., 1949. Pp. xxiii, 671. $5.00.

Corporate Profits in Perspective. By John Lintner. New York: American Enterprise Association, 1949. Pp. 50. Paper, 50¢.

Cases in Credits and Collections. By Theodore N. Beckman and Schuyler F. Otteson. New York: McGraw-Hill Book Co., 1949. Pp. xv, 369. $4.50.

Survey of University Business and Economic Research Projects, 1947–48. By Lyle C. Bryant. Washington: U. S. Department of Commerce, 1949. Pp. vi, 240. $1.00.

South Carolina Textiles: Southern Workers, Northern Bosses. New York: Textile Workers Union of America, C. I. O., 1949. Pp. 24.

The Administrator: Cases on Human Relations in Business. By John Desmond Glover and Ralph M. Hower. Chicago: Richard D. Irwin, 1949. Pp. xiv, 690. $5.50.

Readings on Agricultural Policy. Assembled and Published under the Sponsorship of American Farm Economic Association. Edited by O. B. Jesness. Philadelphia: Blakiston Co., 1949. Pp. xi, 470. $4.75.

Price Theory. By Sidney Weintraub. New York: Pitman Publishing Corp., 1949. Pp. xiii, 447. $5.50.

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